

ANNUAL COMMUNICABLE DISEASE REPORT 2002

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This report represents communicable disease surveillance in Washington: the ongoing collection, analysis and dissemination of morbidity and mortality data to assist in the prevention and control of disease. This is the eighteenth report from the Communicable Disease Epidemiology Section since 1982, having grown from about 50 pages of tabulations produced once every two years to an annual report of tables, graphs, maps, charts, and narrative summaries. In addition to the contributors listed on the previous page, we would like to recognize the thousands of people in local health departments, clinics, hospitals, and clinical laboratories throughout Washington whose disease reports are the basis for this document.



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TECHNICAL NOTES AND COMMENTS

Washington has conducted surveillance for designated notifiable conditions since the late 1880s. Legal requirements for disease reporting (Washington Administrative Code 246-100 and 246-101) form the foundation for disease surveillance and mandate health care providers, health care facilities, laboratories, veterinarians, food service establishments, child care facilities, and schools to notify local health jurisdictions and/or the Washington State Department of Health (DOH) of suspected or confirmed cases of selected conditions within a specified time period. Local health jurisdictions are required to report information regarding those cases to DOH, which in turn sends disease reports to the Centers for Disease Control and Prevention (CDC). This passive surveillance system is necessary to provide local, statewide, and national disease incidence and trends to guide public health activities.

This report presents cases of notifiable conditions reported to DOH in 2002 and summarizes demographic, clinical, geographic, and other trends evident from the data collected through the passive surveillance system.

Incomplete reporting occurs with any surveillance system. The proportion of patients seeing a health care provider, diagnosed by clinical and laboratory methods, and reported to local health agencies varies according to the specific disease. Surveillance case definitions are usually more stringent than criteria for diagnosing and treating communicable diseases. Common and mild illnesses are typically underdiagnosed and underreported, while unusual or severe illnesses are typically more completely reported. This document presents reported cases.

The 2002 population estimates used in rate calculations were provided by the Washington State Office of Financial Management. These are available on line at: <http://www.ofm.wa.gov/pop/index.htm>

Data regarding race and ethnicity collected through notifiable condition surveillance does not correspond with new categories established for the 2000 United States Census. As a result, it is not possible to include estimates of disease incidence according to race or ethnicity in this report. DOH is modifying data collection instruments in order to provide this information in the future; please contact DOH Communicable Disease Epidemiology with any specific questions or concerns.



Point estimates of disease rates without confidence intervals were considered the most straightforward way of providing data to non-technical readers. Disease rates were calculated per 100,000 population and were not age-adjusted due to the small numbers of cases for most diseases. Rates calculated on the basis of five or fewer cases are presented in this report with the understanding that these are not statistically valid and can be dramatically influenced with a small increase or decrease in numbers. Rates based on five or fewer cases should not be used for comparison.

Bi-monthly surveillance data for selected notifiable conditions by county are published in the Department of Health epiTRENDS newsletter and are available on-line at <http://www.doh.wa.gov/publicat/publications.htm>.

Further information about notifiable condition surveillance, including case definitions, guidelines for reporting, fact sheets and other resources can be found at www.doh.wa.gov/notify.

REPORT A NOTIFIABLE CONDITION

In accordance with the Washington law (www.doh.wa.gov/notify/other/legal.htm), public health and health care professionals should report notifiable conditions to the local health jurisdiction in the county of the patient's residence. Disease reporting telephone numbers are provided below. If no one is available at the Local Health Jurisdiction and a condition is immediately notifiable, please call the Department of Health 24-hour reporting line: 1-877-539-4344.

Local Health Jurisdictions

Adams County Health District
509-659-3315

Asotin County Health District
509-758-3344
After hours: 509-758-2648

Benton-Franklin Health District
509-547-9737

Chelan-Douglas Health District
509-886-6400
After hours: 509-665-2202

Clallam County Health Department
360-417-2439
After hours: 360-582-8353

Clark County Health Department
360-397-8408
After hours: 888-727-6230

Columbia County Health District
509-382-2181

Cowlitz Health District
360-414-5599

Garfield County Health District
509-843-3412

Grant County Health District
STDs 509-754-6060 x17
Other CD 509-766-7960
509-754-6060

Grays Harbor Health Department
360-532-8631

Island County Health Department
360-679-7351
After hours: 360-672-4251

Jefferson County Health Department
360-385-9400

Kitsap County Health District
360-337-5239
360-337-5235

Kittitas County Public Health Department
509-962-7515

Klickitat County Health Department
509-773-4565
After hours: 509-773-5796

Lewis County Department of Public Health
360-740-1275
After hours: 360-740-1105

Lincoln County Health Department
509-725-1001

Mason County Health Department
360-427-5274
After hours: 360-426-4441

Northeast Tri-County Health District
800-827-3218
Ferry: 509-775-3111
800-876-3319
Pend Oreille: 509-447-3131
800-873-6162
Stevens: 509-684-5048
800-776-6207

Okanogan County Health Department
509-422-7140

Pacific County Health Department
360-875-9343
After hours: 360-875-9347

Public Health – Seattle & King County
AIDS/HIV 206-296-4645
STDs 206-731-3954
TB 206-731-4579
Other CD 206-296-4774

San Juan County Health Department
360-378-4474
After hours: 360-201-2505

Skagit County Health Department
360-336-9397
After hours: 360-770-8931
360-424-4661

Skamania County Health Department
360-397-8408
After hours: 888-727-6230

Snohomish County Health District
425-339-5278

Spokane Regional Health District
509-324-1442
Message: 509-324-1449
After hours: 509-869-3133

Tacoma-Pierce County Health Department
253-798-6534

Thurston County Health Department
360-786-5470
911 for any public health emergency

Wahkiakum County Health Department
360-795-6207

Walla Walla Health Department
509-527-3290
After hours: 509-520-7336
509-522-7198

Whatcom County Health Department
360-738-2508

Whitman County Health Department
509-397-6280

Yakima County Health District
509-249-6541
800-535-5016 x541

Notifiable Conditions & The Health Care Provider



The following diagnoses are notifiable to local health authorities in Washington in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. **Immediately notifiable conditions are indicated in bold** and should be reported when suspected or confirmed

Acquired Immunodeficiency Syndrome (AIDS) ³ (including AIDS in persons previously reported with HIV infection)

Animal Bites ¹

Botulism ¹ (foodborne, wound, and infant)

Brucellosis ¹

Campylobacteriosis ³

Chancroid ³

Chlamydia trachomatis ³

Cholera ¹

Cryptosporidiosis ³

Cyclosporiasis ³

Diphtheria ¹

Disease of Suspected Bioterrorism Origin (including) ¹

Anthrax

Smallpox

Disease of Suspected Foodborne Origin ¹ (clusters only)

Disease of Suspected Waterborne Origin ¹ (clusters only)

Encephalitis, viral ³

Enterohemorrhagic *E. coli* including *E. coli* 0157:H7 infection ¹

Giardiasis ³

Gonorrhea ³

Granuloma inguinale ³

***Haemophilus influenzae* invasive disease** ¹

(under age five, excluding otitis media)

Hantavirus Pulmonary Syndrome ³

Hemolytic Uremic Syndrome ¹

Hepatitis A - acute ¹

Hepatitis B - acute ³; chronic ^M (initial diagnosis only)

Hepatitis B - surface antigen + pregnant women ³

Hepatitis C - acute and chronic ^M (initial diagnosis only)

Hepatitis, unspecified (infectious) ¹

Herpes simplex, genital and neonatal ³ (initial infection only)

HIV infection ³

Legionellosis ³

Leptospirosis ³

Listeriosis ¹

Lyme disease ³

Lymphogranuloma venereum ³

Malaria ³

Measles (rubeola) ¹

Meningococcal disease ¹

Mumps ³

Paralytic shellfish poisoning ¹

Pertussis ¹

Plague ¹

Poliomyelitis ¹

Psittacosis ³

Q fever ³

Rabies ¹

Rabies post-exposure prophylaxis ³

Relapsing fever (*borreliosis*) ¹

Rubella, including congenital ¹

Salmonellosis ¹

Shigellosis ¹

Streptococcus Group A, invasive disease ³

Syphilis ³ (including congenital)

Tetanus ³

Trichinosis ³

Tuberculosis ¹

Tularemia ³

Typhus ¹

Vibriosis ³

Yellow Fever ¹

Yersiniosis ³

Unexplained Critical Illness or Death ¹

Rare Diseases of Public Health Significance ¹

The following diagnoses are notifiable to the Washington State Department of Health in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. Immediately notifiable conditions are indicated in bold and should be reported when suspected or confirmed.

Notification time frame: ¹ Immediately,
³ Within 3 work days, ^M Within one month

Asthma, occupational (suspected or confirmed) ^M

Call 1-888-66-SHARP

Birth Defects - Autism ^M Call (360) 236-3492

Birth Defects - Cerebral Palsy ^M Call (360) 236-3492

Birth Defects - Fetal Alcohol Syndrome/Fetal Alcohol Effects ^M

Call (360) 236-3492

Pesticide poisoning (hospitalized, fatal, or cluster) ¹

Call 1-888-586-9427; 1-800-222-1222 (after hours)

Pesticide Poisoning (other) ³

Call 1-888-586-9427; 1-800-222-1222 (after hours)

If no one is available at the local health jurisdiction and a condition is Immediately Notifiable, please call (877) 539-4344

For more information please see WAC 246-101 or see www.doh.wa.gov/notify

Notifiable Conditions & Washington's Hospitals



The following diagnoses are notifiable to local health authorities in Washington in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. **Immediately notifiable conditions are indicated in bold** and should be reported when suspected or confirmed. These notifications are for conditions that occur or are treated in the hospital. Hospital laboratories should use the *Notifiable Conditions and Washington's Laboratories* Poster.

Acquired Immunodeficiency Syndrome (AIDS)³ (including AIDS in persons previously reported with HIV infection)

Animal Bites¹

Botulism¹ (foodborne, wound, and infant)

Brucellosis¹

Campylobacteriosis³

Chancroid³

*Chlamydia trachomatis*³

Cholera¹

Cryptosporidiosis³

Cyclosporiasis³

Diphtheria¹

Disease of Suspected Bioterrorism Origin (including)¹

Anthrax

Smallpox

Disease of Suspected Foodborne Origin¹ (clusters only)

Disease of Suspected Waterborne Origin¹ (clusters only)

Encephalitis, viral³

Enterohemorrhagic *E. coli* including *E. coli* 0157:H7 infection¹

Giardiasis³

Gonorrhea³

Granuloma inguinale³

***Haemophilus influenzae* invasive disease¹**

(under age five, excluding otitis media)

Hantavirus Pulmonary Syndrome³

Hemolytic Uremic Syndrome¹

Hepatitis A - acute¹

Hepatitis B - acute³; chronic^M (initial diagnosis only)

Hepatitis B - surface antigen + pregnant women³

Hepatitis C - acute and chronic^M (initial diagnosis only)

Hepatitis, unspecified (infectious)¹

HIV infection³

Immunization reactions, severe, adverse³

Legionellosis³

Leptospirosis³

Listeriosis¹

Lyme disease³

Lymphogranuloma venereum³

Malaria³

Measles (rubeola)¹

Meningococcal disease¹

Mumps³

Paralytic shellfish poisoning¹

Pertussis¹

Plague¹

Poliomyelitis¹

Psittacosis³

Q fever³

Rabies¹

Rabies post-exposure prophylaxis³

Relapsing fever (*borreliosis*)¹

Rubella, including congenital¹

Salmonellosis¹

Shigellosis¹

Streptococcus Group A, invasive disease³

Syphilis³ (including congenital)

Tetanus³

Trichinosis³

Tuberculosis¹

Tularemia³

Typhus¹

Vibriosis³

Yellow Fever¹

Yersiniosis³

Outbreaks of disease that occur or are treated in the hospital (pertussis, influenza, nosocomial infections, viral meningitis, etc.)

Unexplained Critical Illness or Death¹

Rare Diseases of Public Health Significance¹

The following diagnoses are notifiable to the Washington State Department of Health in accordance with WAC 246-101. Timeframes for notification are indicated in footnotes. Immediately notifiable conditions are indicated in bold and should be reported when suspected or confirmed.

Asthma, occupational (suspected or confirmed)^M

Call 1-888-66-SHARP

Birth Defects -Abdominal Wall Defects, Autism, Cerebral Palsy, Down Syndrome, Hypospadias, Limb Reductions, Neural Tube Defects, Oral Clefts^M Call (360) 236-3591

Gunshot Wounds^M Call (360) 236-3693

Pesticide poisoning (hospitalized, fatal, or cluster)¹

Call 1-888-586-9427; 1-800-222-1222 (after hours)

Notification time frame:¹ Immediately,
³ Within 3 work days, ^M Within one month

If no one is available at the local health jurisdiction and a condition is Immediately Notifiable, please call (877) 539-4344

Notifiable Conditions & Washington's Laboratories



The following laboratory results (preliminary or confirmed) are notifiable to public health authorities in Washington in accordance with WAC 246-101. Information provided must include: Specimen Type; Name and Telephone Number of Laboratory; Date Specimen Collected; Date Specimen Received; Requesting Health Care Provider's Name & Telephone Number or Address; Test Result; Name of Patient (if available) or patient identifier; Sex & Date of Birth or Age of Patient (if available).

Blood Lead Level (Elevated) ^{2&i}

Blood Lead Level (Non-elevated) ^{M &i}

Bordetella pertussis ^{2*}

Brucella ^{2*!}

CD4+ counts <200 or 14% ^{M &ii}

Chlamydia trachomatis ^{2*}

Clostridium botulinum ^{!*}

Corynebacterium diphtheriae ^{2*!}

Cryptosporidium parvum ^{2*}

Cyclospora cayetanensis ^{2*!}

Diseases of Suspected

Bioterrorism Origin ^{!*}

Anthrax (*Bacillus anthracis*)

Smallpox (Variola virus)

Escherichia coli (Shiga-like toxins only) ^{2*!}

Francisella tularensis [!]

Hepatitis A (*Hepatovirus*) ^{2*}

Human Immunodeficiency Virus ^{2 &ii}

(Western Blot, P-24 Antigen, or viral culture)

Human Immunodeficiency Virus ^{M &ii}

(RNA or DNA Nucleic Acid Tests)

Listeria ^{2*}

Mycobacterium tuberculosis ^{2 &iii!@}

Neisseria gonorrhoeae ^{2*}

Neisseria meningitidis ^{2*!}

Rabies ^{!*}

Rubeola ^{!*}

Salmonella ^{2*!}

Shigella ^{2*!}

Treponema pallidum [!]

Unusual Diseases of Public Health

Significance ^{!*}

Vibrio cholerae ^{!*}

Yersinia pestis ^{!*}

CODE LEGEND

[!] Immediately Notifiable

² Notifiable within 2 Work Days

^M Notifiable on a Monthly Basis

^{*} Notifiable to the local health department of the patient's residence

^{&i} Notifiable to DOH Lead Program (360-236-4252)

^{&ii} Notifiable to DOH - IDRH Assessment (360-236-3419)

^{&iii} Notifiable to DOH - TB Services (206-361-2838)

[!] Specimen submission required

[@] Antibiotic Sensitivity Testing (First isolates only)

To report a Notifiable Condition, contact the local health jurisdiction of the patient's residence, unless the condition is reportable directly to DOH. If the patient's local health jurisdiction is unknown, please notify the local health jurisdiction of the health care provider that ordered the diagnostic test.

If no one is available at the local health jurisdiction and a condition is Immediately Notifiable, please call
(877) 539-4344



COMMUNICABLE DISEASE SUMMARIES

AIDS

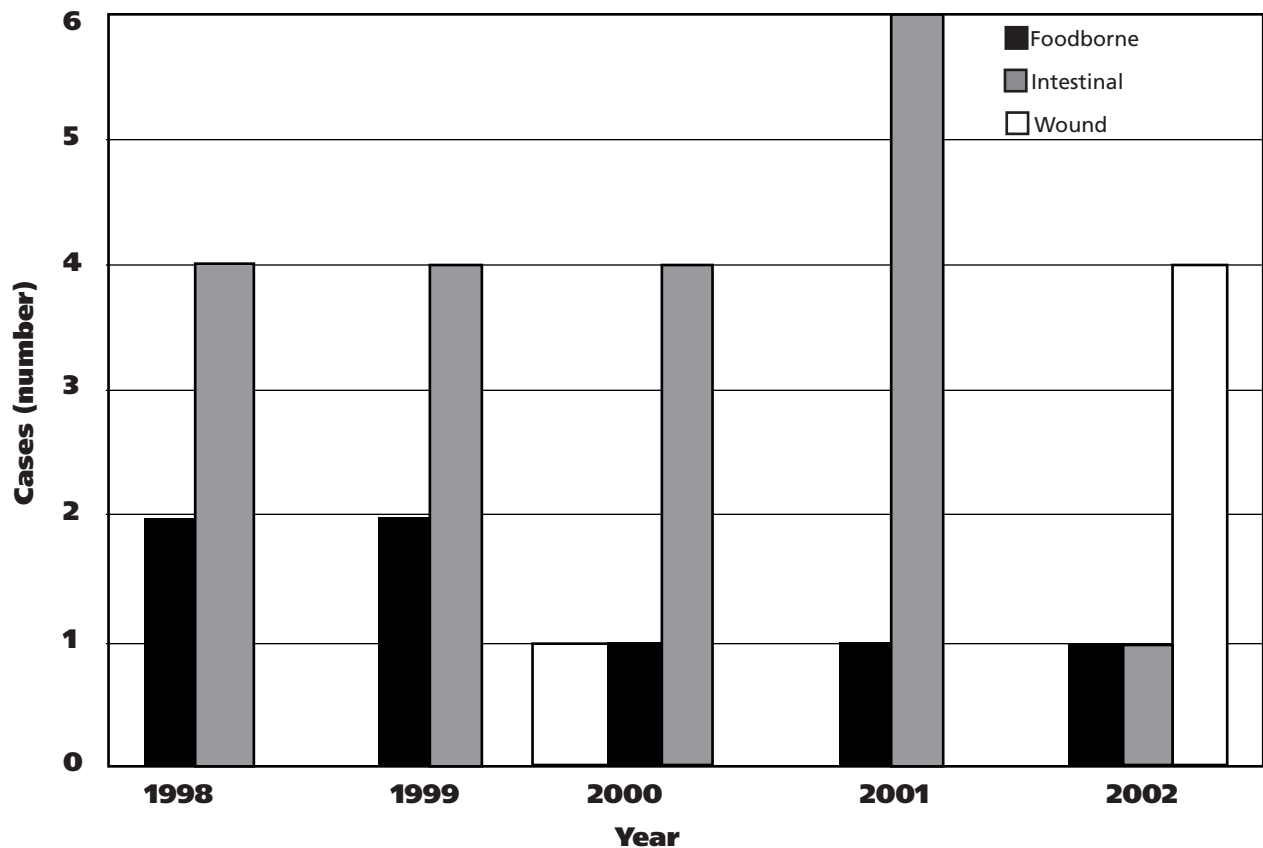
See HIV infection/AIDS

BOTULISM

Botulism is caused by a neurotoxin produced by the bacteria *Clostridium botulinum*. Botulinum is a potential agent of bioterrorism. *C. botulinum* can be found worldwide in soil, agricultural products and animal intestinal tracts. Botulism occurs in three forms: foodborne, intestinal, and wound; all resulting in flaccid paralysis caused by botulinum neurotoxin.

Foodborne (classic) botulism, which results from ingestion of botulinum toxin in contaminated food, is an illness of variable severity. Symptoms initially include blurred or double vision, dysphagia, dry mouth, vomiting, constipation or diarrhea, and weakness, progressing to descending, symmetrical flaccid paralysis. Neurologic symptoms usually appear hours to days after eating contaminated food. With supportive care and administration of botulinum antitoxin, mortality is 5-10%; recovery may take months.

Figure 1. Botulism - reported cases by category of disease, 1998-2002



Intestinal (infant or adult) botulism results from ingestion of toxigenic *C. botulinum* spores and affects infants under a year of age and rarely, adults with altered gastrointestinal anatomy. Symptoms may include constipation, poor feeding, and failure to thrive that may be followed by progressive weakness, impaired respiration, and death. Raw honey consumption has been implicated in some, but not all, cases of intestinal botulism. Treatment is primarily supportive, and human-derived botulism immune globulin is available.

Wound botulism results from a wound infected with toxigenic *C. botulinum*. Symptoms of wound botulism are the same as those seen with foodborne botulism. Treatment is wound debridement and botulinum antitoxin. The risk associated with subcutaneous heroin injection occurs with product imported from Mexico, known as black tar heroin, which is more commonly used on the west coast.

The number of cases of foodborne and infant botulism has remained fairly constant in recent years. Nationally, wound botulism incidence has increased with the growing use of black tar heroin.

Proper home canning methods, avoiding the use of honey for infants, and avoiding subcutaneous heroin use are preventative measures against botulism.

One case of foodborne botulism was reported in 2002: an 86 year-old woman who consumed home-canned green beans. Foodborne botulism in Washington has been associated with improperly home-canned asparagus, beets, corn, carrots, spinach, and salsa.

One case of intestinal botulism was reported in 2002 in a 6 month-old child; the infant did not have a history of eating raw honey

In 2002, 4 cases of wound botulism were reported in Washington, 3 were associated with subcutaneous injection of heroin and one case denied current injection drug use but had injected drugs in the past.

BRUCELLOSIS

Brucellosis is a systemic bacterial infection caused by several species of *Brucella* including *B. abortus*, *B. melitensis*, *B. suis*, or *B. canis*. Symptom onset may be acute or subacute and include fever, chills, headache, malaise, weight loss and fatigue; symptoms may persist for a year or more if the patient is not adequately treated. Infection may occur occupationally for workers exposed to infected animals or their tissues (i.e., farm workers, veterinarians). Consumption of raw milk and milk products from infected cows, sheep and goats may cause sporadic cases or outbreaks, but brucellosis is not transmitted from person-to-person.

Washington was declared free of bovine brucellosis in 1988; while an average of one case per year is reported among Washington residents, most result from exposures outside of the United States (US). Individuals should avoid raw milk and dairy products and use appropriate precautions (i.e., gloves, clothing) when handling carcasses and products of potentially infected animals to avoid infection.

Brucellosis is a potential agent of bioterrorism and is an immediately notifiable condition in Washington. Suspect or confirmed cases in individuals without an appropriate exposure history should raise the index of suspicion for a bioterrorism event.

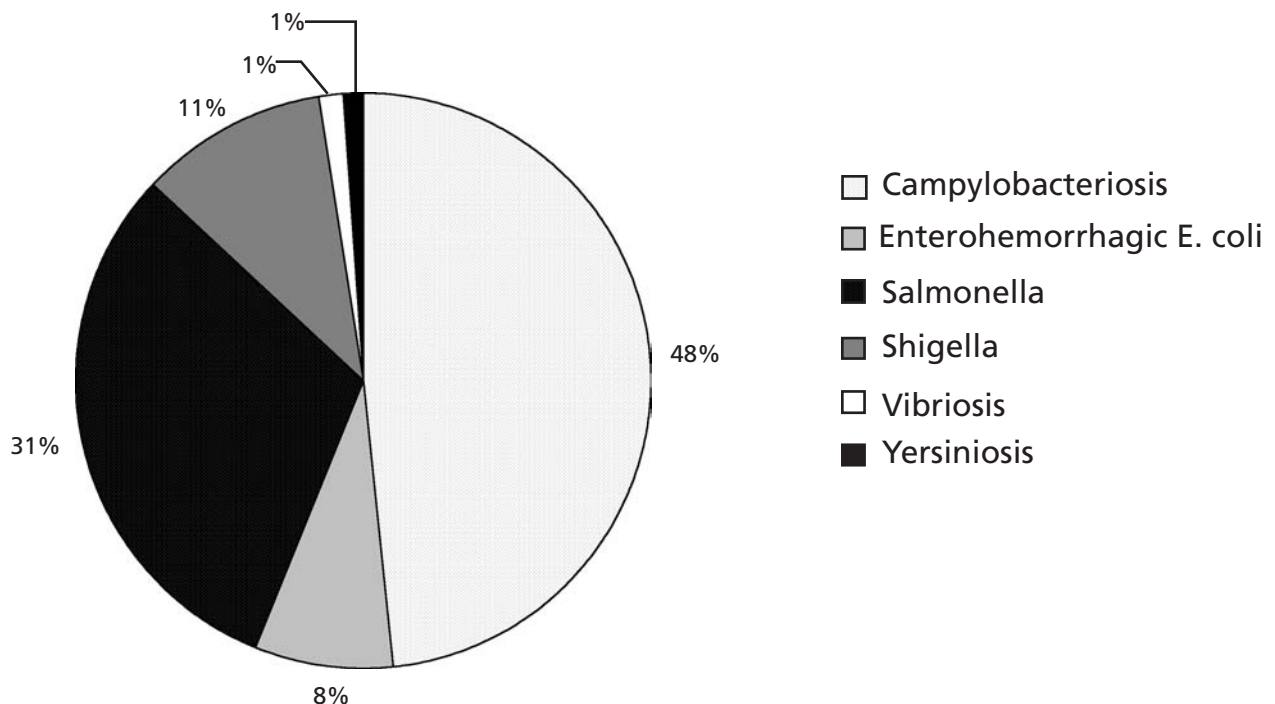
Two cases of brucellosis were reported in Washington in 2002. Both cases occurred in Hispanic residents of Yakima County who were likely exposed in Mexico, where brucellosis is more common. The cases were unrelated and reported exposures to raw milk or milk products, including homemade cheese. The infectious agent in both cases was *Brucella melitensis/abortus*, and was not further characterized by the laboratory.

CAMPYLOBACTERIOSIS

Campylobacteriosis is a bacterial infection characterized by diarrhea, abdominal pain, malaise, fever, nausea and vomiting. The disease is most commonly caused by *Campylobacter jejuni*, and less commonly by *C. coli*. Other *Campylobacter* species, including *C. lardis* and *C. fetus* have also been associated with infection.

Campylobacteriosis was the most frequently reported enteric disease in 2002, representing 38% of all bacterial enteric disease reports. There were 1,032 cases reported for an incidence of 17.1 cases/100,000 population. This is consistent with disease rates for the previous five years.

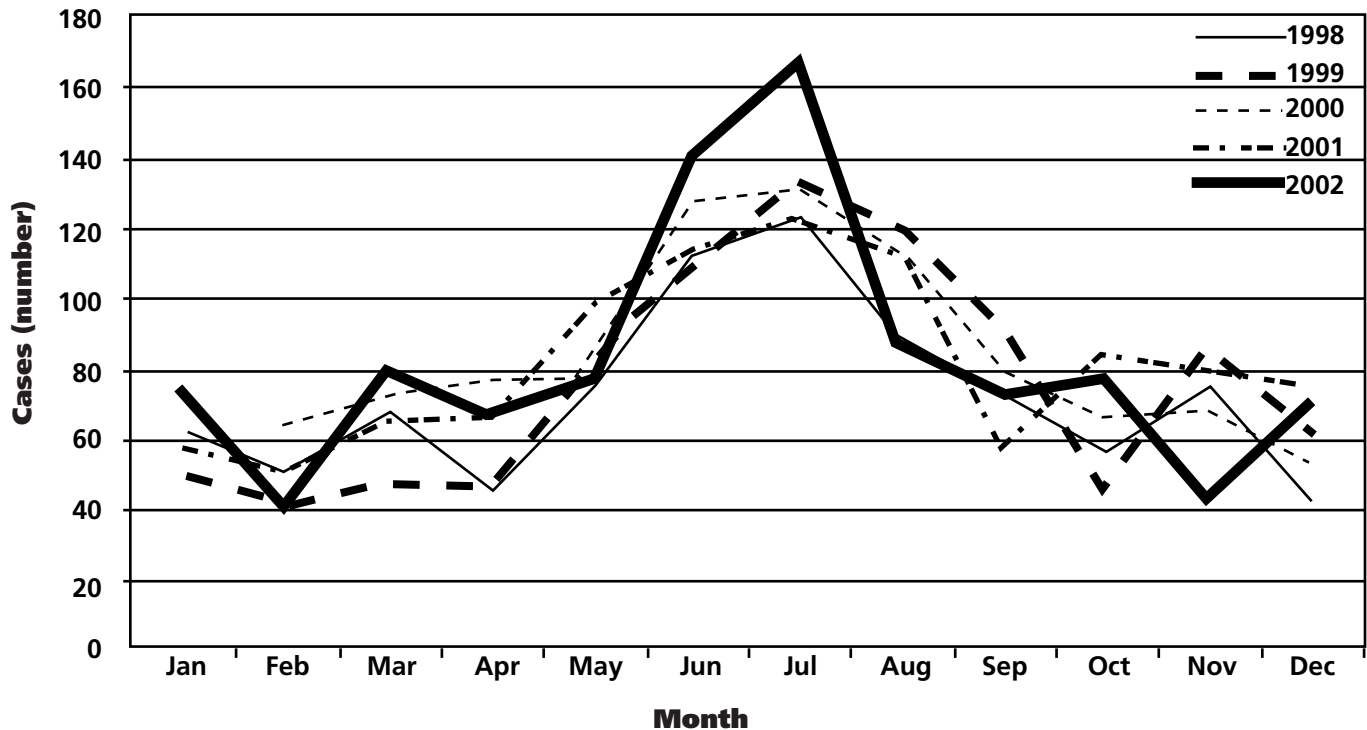
Figure 2. Bacterial enteric pathogens- percentage of reported cases by pathogen, 2002



Submission of *Campylobacter* isolates to the DOH Public Health Laboratories (PHL) is not required, but identification of the species and relatedness of organisms can assist in outbreak detection. The species of *Campylobacter* were determined for approximately half of the reported cases (472/1,032). Of these, 467 (99%) were *C. jejuni* and 5 (1%) were *C. coli*.

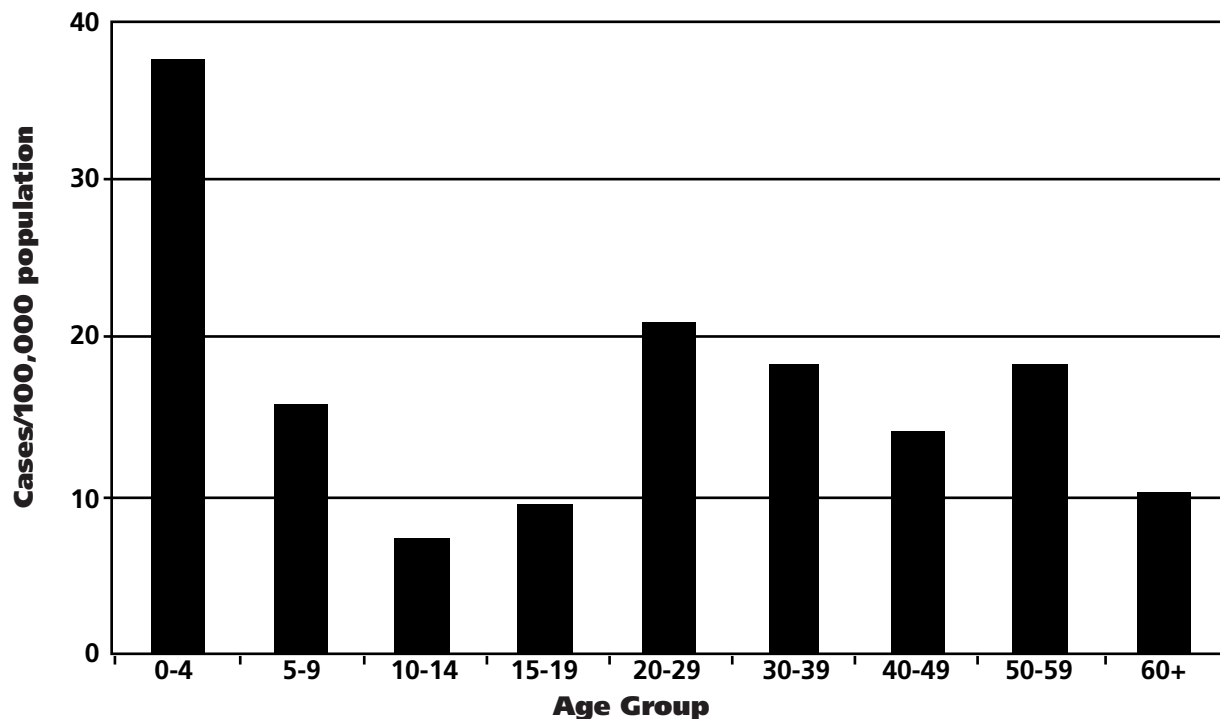
Cases of campylobacteriosis occur year-round, but peaks are commonly seen in summer months. In 2002, the highest number of cases were reported from June through August. Less noticeable peaks, observed in March, October and December, were due to a recurring outbreak in Walla Walla County (An outbreak of campylobacteriosis in a state-run facility is described in Appendix IV: Special Topics). Outbreaks of campylobacteriosis do not occur as commonly as other enteric diseases due to the fragility of the microorganism and low rate of person-to-person spread. There were four confirmed outbreaks of campylobacteriosis reported in 2002.

Figure 3. Campylobacteriosis - reported cases by month of onset, 1998-2002



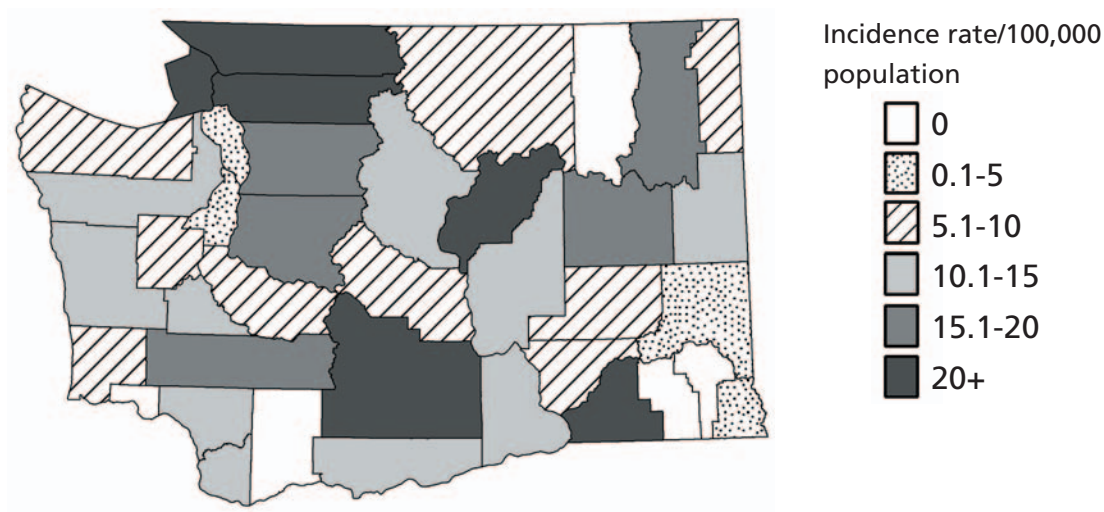
Children under 5 years of age had the highest incidence of illness with a rate of 37/100,000. Rates of illness were also slightly elevated in young adults, as is typical of campylobacteriosis in developed countries. There was no difference in the incidence of disease by gender.

Figure 4. Campylobacteriosis - incidence by age group, 2002



High rates of campylobacteriosis were observed in Walla Walla (253/100,000), Yakima (45/100,000), Whatcom (27/100,000) and Skagit (24/100,000) counties. Douglas, Lincoln and San Juan counties also had rates above the statewide average, however these are based on small numbers of cases.

Figure 5. Campylobacteriosis - incidence by county, 2002



CHANCROID

Chancroid is a sexually transmitted genital ulcer disease caused by *Haemophilus ducreyi*, a gram-negative bacillus. Chancroid is characterized by painful ulceration at the site of infection. The incubation period is usually 4-7 days, following sexual contact with an infected individual.

Most prevalent in tropical and subtropical regions of the world, chancroid is much less common in temperate zones and may occur in small outbreaks. In the US, outbreaks and some endemic transmission have occurred, principally among migrant farm workers and poor inner-city residents. Chancroid is most often diagnosed in men, who usually present with genital ulcers or inguinal tenderness. Depending on the site of the ulcer, women often have less obvious symptoms. Chancroid, like other genital ulcer diseases, is associated with increased risk of HIV transmission.

Current recommendations for diagnosis and treatment for chancroid can be found in the CDC's [2002 STD Treatment Guidelines](http://www.cdc.gov/STD/treatment/), available on the web at www.cdc.gov/STD/treatment/.

A total of 38 cases were reported in the US in 2001, with two states (South Carolina and Texas) reporting 55% of the cases. One case of chancroid was reported in Washington State in 2002.

CHLAMYDIA TRACHOMATIS

Chlamydia trachomatis is the most commonly reported sexually transmitted disease (STD) in the US and in Washington. Asymptomatic infection is common among both men and women. If symptoms occur, there may be abnormal discharge from the site of infection or pain during urination. Women may also have abdominal pain; untreated *Chlamydia* is a major cause of pelvic inflammatory disease (PID) that can lead to infertility or ectopic pregnancies (particularly with recurrent infections). Perinatal infection can result in neonatal conjunctivitis or pneumonia. Complications in untreated men include urethritis, epididymitis, and proctitis. Similar to other STDs, *Chlamydia* may enhance the transmission of HIV.

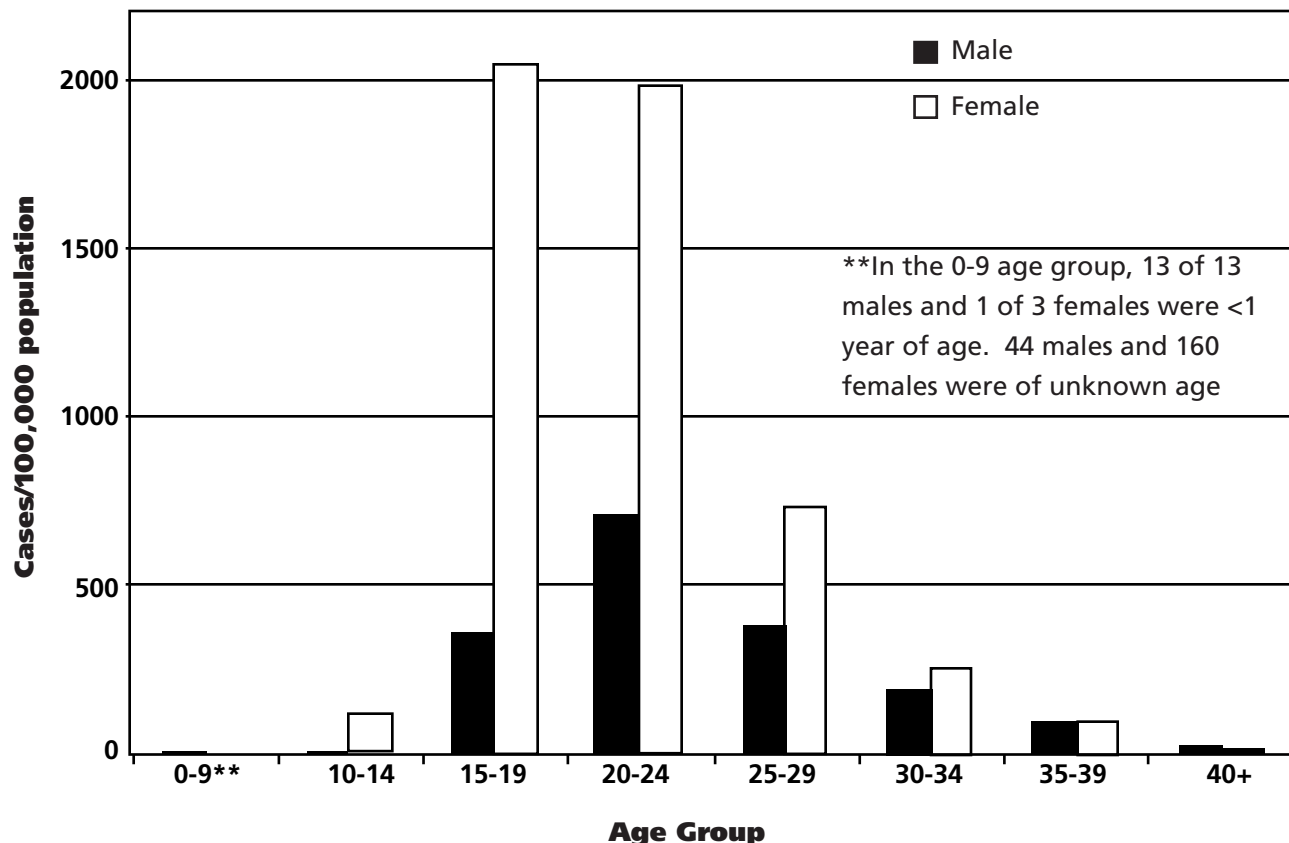
Current recommendations for diagnosis and treatment for *Chlamydia* can be found in the CDC's [2002 STD Treatment Guidelines](http://www.cdc.gov/STD/treatment/), available on the CDC website at www.cdc.gov/STD/treatment/. Because of frequent co-infection with *Neisseria gonorrhoeae*, effective treatment for gonorrhea should be included.

In 2002, 14,936 cases of *Chlamydia* (11,008 female, including 283 cases of chlamydial PID, and 3,931 male) were reported for a rate of 247 cases/100,000 population. Of these cases, 666 (4.5%) were also infected with *N. gonorrhoeae*. This compares to 13,631 cases of *Chlamydia* (228/100,000) in 2001.

The Department of Health and Human Services' Region X Infertility Prevention Project (IPP) targets women for screening and accounts for the high female to male ratio (2.8:1) seen in our surveillance data. Women attending STD clinics or seeking reproductive health services in other facilities are the population targeted for *Chlamydia* screening through the IPP.

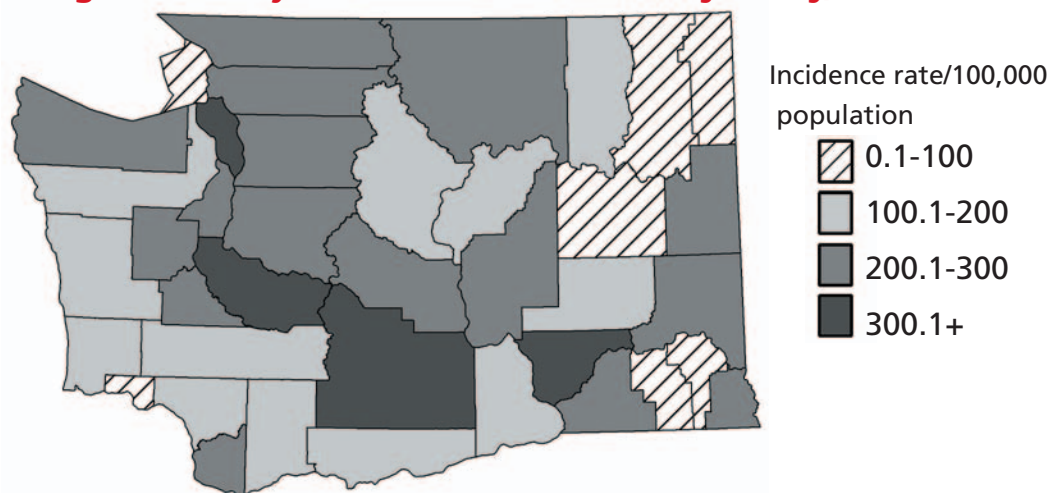
The increase in *Chlamydia* cases can be attributed to several factors including more sensitive laboratory techniques, an increase in routine screening, improved surveillance and reporting, and an increase in risky sexual behaviors.

Figure 6. *Chlamydia trachomatis* - incidence by sex and age group, 2002



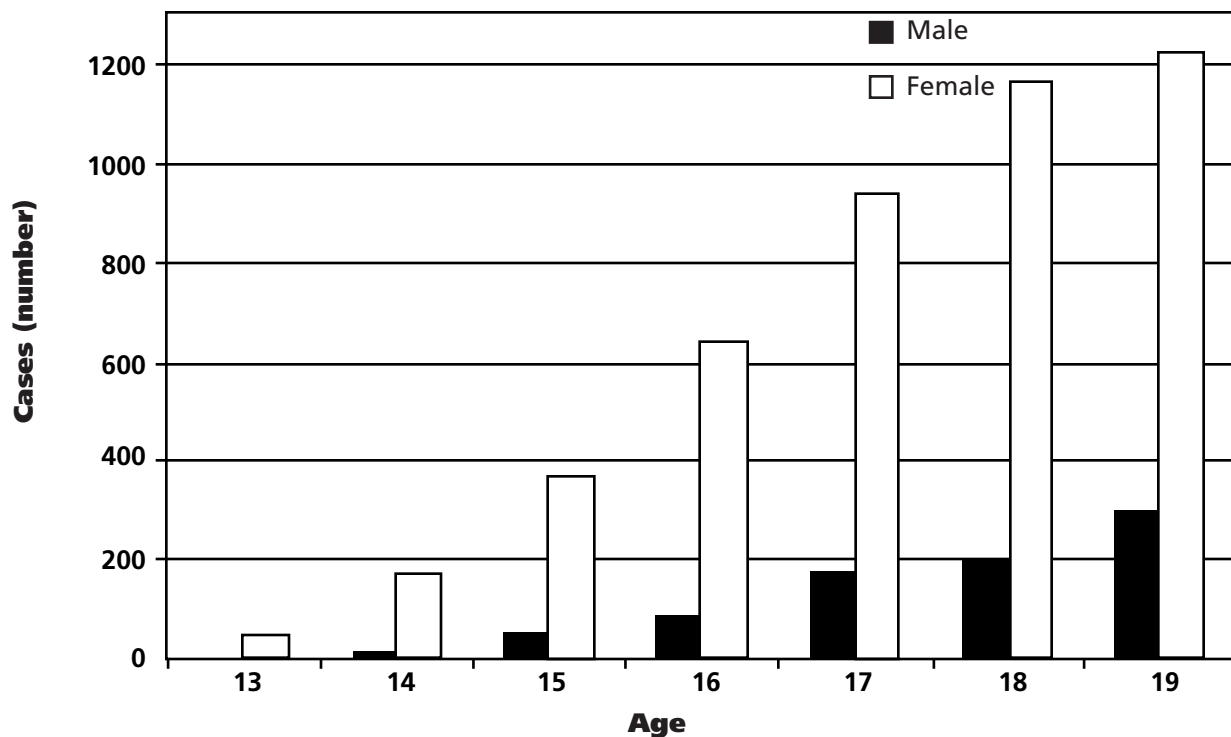
All 39 Washington counties reported cases of *Chlamydia*. The highest incidence was in Yakima (394/100,000) and Pierce (377/100,000) counties.

Figure 7. *Chlamydia trachomatis* - incidence by county, 2002



Chlamydia can be a problem for sexually active teens (36% of reports, 5,356 cases), and is often concentrated among female adolescents, who are physiologically more susceptible to a chlamydial infection than older women. For ages 15-19 years, the incidence was 2,037/100,000 for females and 355/100,000 for males. Among ages 20-24 years, the rate was 1,982/100,000 for females and 694/100,000 for males. Screening more often than once a year should be considered for adolescents.

Figure 8. *Chlamydia trachomatis* - reported cases among persons 13-19 years of age by age and sex, 2002



Of 1,447 cases with recurrent *Chlamydia* (>1 episode in 12 months), 46% (661) were teenagers; 11% of females (1,172 cases) had recurrent *Chlamydia* infection.

CHOLERA

Intestinal infection with toxigenic *Vibrio cholerae* serogroup O1 or O139 may range from asymptomatic to a life-threatening illness with acute, profuse watery diarrhea and dehydration. The bacteria are carried only by humans and are spread primarily by fecal-oral route, usually through contaminated food or water. Non-toxigenic *Vibrio* including *V. cholerae* non-O1 non-O139 are notifiable as vibriosis. Cholera is an immediately notifiable condition in Washington.

V. cholerae is a major cause of epidemic diarrhea in Asia, Africa, and Latin America. Cases of cholera are occasionally reported in Washington following travel to an endemic area. There was one *V. cholerae* (serotype Ogawa) case in 2002, associated with travel to the Philippines.

CRYPTOSPORIDIOSIS

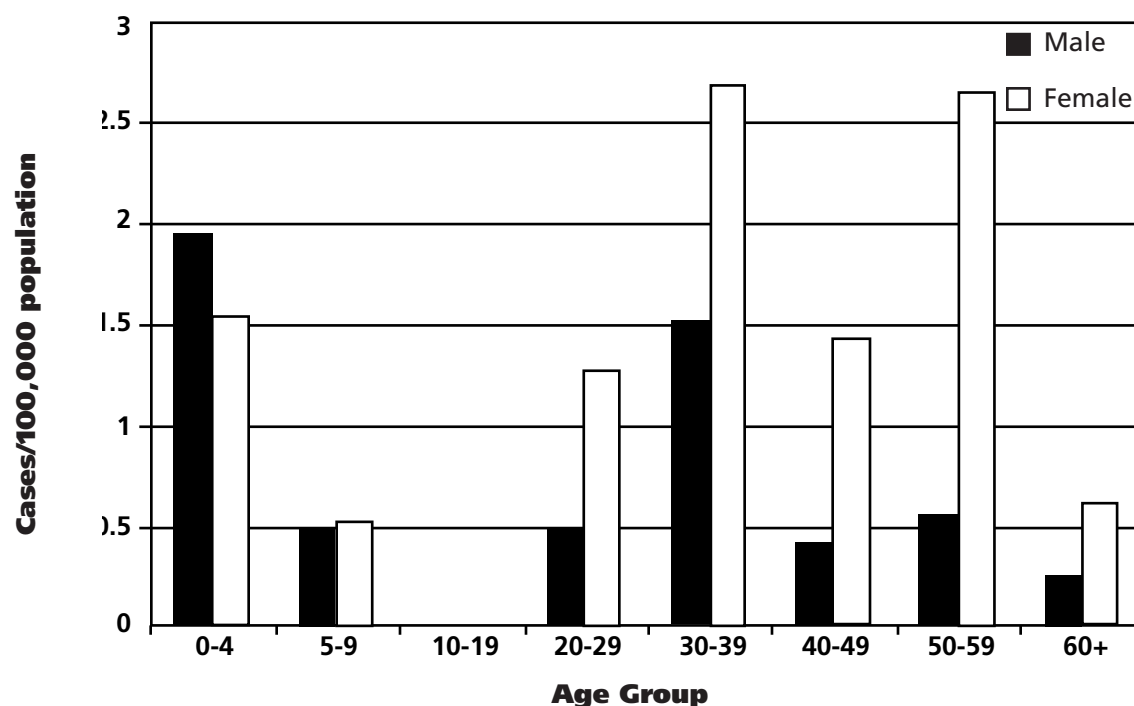
Cryptosporidiosis is a diarrheal illness caused by the protozoa *Cryptosporidium parvum*, which is found in animals and contaminated water sources. Symptoms may be prolonged and include watery diarrhea, abdominal pain, nausea, vomiting, weight loss and fever. For persons with immune deficiencies, especially those with AIDS, the disease can be serious and long lasting.

Transmission is fecal-oral, through ingestion of contaminated food or water or by direct contact with infected humans or animals, particularly calves. Outbreaks have occurred in water parks, swimming pools, and child care facilities. The organism can survive in the environment for long periods of time and is resistant to chlorine disinfection. *C. parvum* cysts are present in the majority of surface waters tested throughout the US; municipal water systems, home filtered water and bottled waters are not necessarily free of *C. parvum*.

Health care providers suspecting cryptosporidiosis must specifically request stool testing for *C. parvum*, as this test may not be routinely performed by clinical laboratories.

Cryptosporidiosis has been notifiable in Washington since 2001. There were 62 cases reported in 2002, a decrease from the 73 cases reported in 2001, with no outbreaks identified. The two most commonly reported risk factors were recent travel outside the US (22%), and contact with farm animals or sick animals (8%). Washington cases occurred most frequently in younger adults and over two-thirds of cases occurred in women.

Figure 9. Cryptosporidiosis -incidence by sex and age group, 2002



CYCLOSPORIASIS

Cyclosporiasis is a parasitic disease caused by *Cyclospora cayetanensis*, causing persistent watery diarrhea, nausea, anorexia, abdominal pain, fatigue and weight loss; fever is rare. *Cyclospora* is transmitted primarily by fecal-oral route, through ingestion of contaminated water or food. Fresh fruits and vegetables (raspberries, basil, lettuce) have been implicated in national and international outbreaks of cyclosporiasis.

Since identification of *Cyclospora* in stool requires special laboratory tests that are not routinely performed, health care providers need to specifically request testing for *Cyclospora* if symptoms, travel, or food history are suggestive of cyclosporiasis.

Cyclosporiasis became notifiable in Washington in 2001, when 9 cases were reported to DOH. Five cases were reported in 2002, with 2 of the 5 cases reporting travel outside the country (South America, Caribbean) during their exposure period.

DIPHTHERIA

Diphtheria is a bacterial disease caused by a toxogenic strain of *Corynebacterium diphtheriae*, usually involving the upper respiratory tract, other mucous membranes, or the skin. The toxin produced by *C. diphtheriae* causes inflammation, swelling, and the formation of a characteristic grayish white membrane on lesions it produces. In severe cases of pharyngeal diphtheria, this may progress to airway obstruction. The toxin also affects the myocardium and nerves, and is fatal in 5–10% of non-cutaneous cases.

Transmission occurs through contact with an infected person or contact with articles soiled by discharge from diphtherial lesions. Diphtheria is an immediately notifiable condition in Washington.

Continued control of this disease depends on routine childhood immunization using diphtheria toxoid, with re-immunization of adults every 10 years. In Washington, diphtheria is not endemic and cases are usually travel-associated. The last case of diphtheria reported in Washington occurred in 1979.

DISEASE OF SUSPECTED BIOTERRORISM ORIGIN

DOH has never received a confirmed report of a disease of suspected bioterrorism origin. State and local public health agencies have responded to possible bioterrorism incidents (including letters claiming to contain anthrax) by recommending testing when appropriate and working closely with law enforcement agencies. Any disease of suspected bioterrorism origin is immediately notifiable to the local health jurisdiction and to DOH. Diseases of suspected bioterrorism origin include, but are not limited to, anthrax, smallpox, plague, tularemia and botulism.

Public health emergency preparedness and specifically bioterrorism preparedness is imperative for an effective and coordinated response to public health emergencies, and has been a priority for DOH. Two examples of bioterrorism preparedness initiatives are described below.

In October 2002, planning for smallpox vaccination clinics began throughout Washington as part of Stage 1 of the National Smallpox Vaccination Program. This voluntary vaccination program was instituted to prepare the US for a potential terrorist attack involving the release of the smallpox virus. To prepare for the vaccination program, a comprehensive vaccine safety surveillance system was created to collect data about vaccine administration and adverse reactions. Vaccinations of health care and public health staff who will be part of Smallpox Response Teams was planned for early 2003.

While suspicious powder calls have diminished from their peak following the anthrax events of 2001, changes in national alert levels have reinforced the need to work closely with first responders and develop response protocols that clearly delineate roles and responsibilities during suspicious powder incidents. Standard response protocols have been developed and work has begun on training for public health and laboratory staff as well as for first responders from other agencies.

DISEASE OF SUSPECTED FOODBORNE ORIGIN

A number of infectious agents can be acquired from contaminated food. An outbreak of suspected foodborne origin is defined as two or more ill persons with epidemiologic and/or laboratory evidence implicating a common food as the source of the illness. Foodborne outbreaks may result from various factors including inherently contaminated product (e.g., *Salmonella* and eggs), improper food preparation techniques, and contamination by ill food handlers. Agents that may cause foodborne outbreaks include *Bacillus cereus*, botulinum toxin, *Campylobacter*, *E. coli* O157:H7, *Giardia*, hepatitis A, *Listeria*, noroviruses, *Salmonella*, and *Shigella*. Diseases of suspected foodborne origin are immediately notifiable in Washington.

The number of reported foodborne outbreaks likely represents only a small proportion of the actual events, and reports can vary considerably from year to year. In 2002, 56 foodborne outbreaks affecting 704 persons were reported. Half resulted in 3 or fewer ill persons. One outbreak of norovirus (Norwalk-like virus) infections involved 219 cases and was associated with multiple food items at a single restaurant.

As in previous years, most reported outbreaks (63%) occurred in King County and the majority of reported outbreaks (75%) were associated with restaurant-prepared food.

Table 1. Foodborne outbreaks by place of preparation 2002

Place	Outbreaks		Cases	
	#	%	#	%
Caterer	2	4	31	4
Church	1	2	23	3
Grocery	2	4	15	2
Home	4	7	42	6
Prison	1	2	43	6
Restaurant	40	73	456	65
Restaurant/Caterer	1	2	27	4
Unknown	5	7	67	10
Total	56	100	704	100

The etiologic agent was confirmed by laboratory testing in 17 (30%) outbreaks, an increase over 2001 when an etiologic agent was confirmed in only 9% of reported outbreaks. A specific food item causing illness was not identified in 26 (46%) of the outbreaks

Table 2. Foodborne outbreaks by agent 2002

Agent*	Outbreaks		Cases	
	#	%	#	%
Bacterial				
<i>B.cereus</i>	1	2	8	1
<i>Campylobacter</i>	4	7	49	7
<i>E.coli</i>	1	2	4	<1
<i>Salmonella</i>	9	16	157	22
<i>Staph aureus</i>	3	5	9	1
Other bacterial	1	2	2	<1
Chemical	1	2	2	<1
Norovirus	10	18	356	51
Unknown	26	46	116	16
Total	56	100	704	100

* Includes laboratory confirmed cases with clinical symptoms matching an agent but without laboratory confirmation

Poultry was associated with 9 (16%) outbreaks and fresh produce was associated with 6 (11%) outbreaks. Three other outbreaks were due to raw or inadequately cooked products, including raw oysters, unpasteurized milk, and eggs. Factors contributing to foodborne illness in these outbreaks included cross-contamination of the food item and improper handling or storage of foods that allowed bacterial growth or viability; more than one factor may be identified in a single outbreak.

Table 3. Factors contributing to foodborne outbreaks, 2002

Factor*	Outbreaks (N=56)	
	#	%
Contamination		
Contaminated raw product	8	14
Cross-Contamination	10	18
Bare hand contact	14	25
Ill Food Handler	8	14
Proliferation		
Room temperature holding	14	25
Slow cooling	16	29
Prior preparation	16	29
Survival		
Inadequate reheating	14	25

*An outbreak may have more than one factor identified

DISEASE OF SUSPECTED WATERBORNE ORIGIN

Waterborne outbreaks are due to many agents, including viruses, bacteria and parasites that contaminate recreational or drinking water. An outbreak is defined as two or more ill persons with epidemiologic and/or laboratory evidence implicating a common water exposure. Suspected outbreaks should be reported promptly to local health jurisdiction, even before confirmatory laboratory results are available. In 2002, no waterborne outbreaks were reported in Washington.

Table 4. Waterborne disease outbreaks, 1998-2002

Year	Agent	# cases	Setting
1998	viral	248	swimming lake
1999	viral	58	swimming lake
	viral	46	creek water
	viral	68	well
	<i>E. coli</i> O157:H7	36	swimming lake
2000	<i>Pseudomona</i>	10	hotel pool/hot tub
2001	<i>Pseudomona</i>	3	hotel hot tub
2002	None reported		

ENCEPHALITIS, VIRAL

While a variety of viruses can cause encephalitis, surveillance is conducted only for arboviral (mosquito-borne) infections, including West Nile virus (WNV), western equine encephalitis (WEE), and St. Louis encephalitis (SLE). Cases in Washington are counted only if the disease was acquired in state; travel-associated cases are counted in the state where exposure and transmission occurred. In Washington, endemic cases of WEE and SLE were documented in the Yakima valley area during the 1930s, 1970s, and early 1980s. Both WEE and SLE are transmitted to humans by the bite of an infected mosquito. Wild birds are the natural reservoir for the viruses and the source of infection for mosquitoes. Species of mosquitoes that act as vectors for these diseases are found throughout the state. The vast majority of human arbovirus infections are asymptomatic, however severe illness with fever, headache, altered mental status, seizures, coma and death can occur. The last reported human case of arbovirus encephalitis, WEE, occurred in a resident of King county who became ill in 1988.

In 1999, West Nile virus was first identified in the western hemisphere in New York City. Between 1999 and 2003, the virus spread throughout most of North America, causing a major epizootic in birds and horses and an epidemic in humans. In Washington, WNV enzootic activity was first identified in September 2002 when a dead raven from Pend Oreille county was found to be infected. In the next 3 months, WNV was found in a dead crow from Snohomish county, and in 2 locally maintained horses (Whatcom and Island counties) that had neurologic symptoms. One resident of Washington State developed WNV infection after being bitten by mosquitoes during a visit to Michigan (in accordance with CDC case reporting requirements, this is counted as a Michigan case).

Most human WNV infections are asymptomatic, and approximately 20% develop mild, self-limited illness. Less than 1% of infected people develop serious neurologic disease including meningoencephalitis or acute flaccid paralysis. Individuals over 50 years of age are at higher risk of severe illness and death. Prevention and risk reduction measures include application of personal protective measures to avoid mosquito bites, reducing mosquito breeding sources, and mosquito-proofing residences.

No cases in Washington met the case definition for encephalitis reporting in 2002.

ENTEROHEMORRHAGIC *E. COLI*

Infections caused by *Escherichia coli* O157:H7 and other Shiga-like toxin producing *E. coli* serotypes are notifiable as enterohemorrhagic *E. coli* infection. Symptoms include bloody diarrhea and abdominal pain, usually without fever, although asymptomatic infection can occur. Serious complications, including hemolytic uremic syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP) may occur.

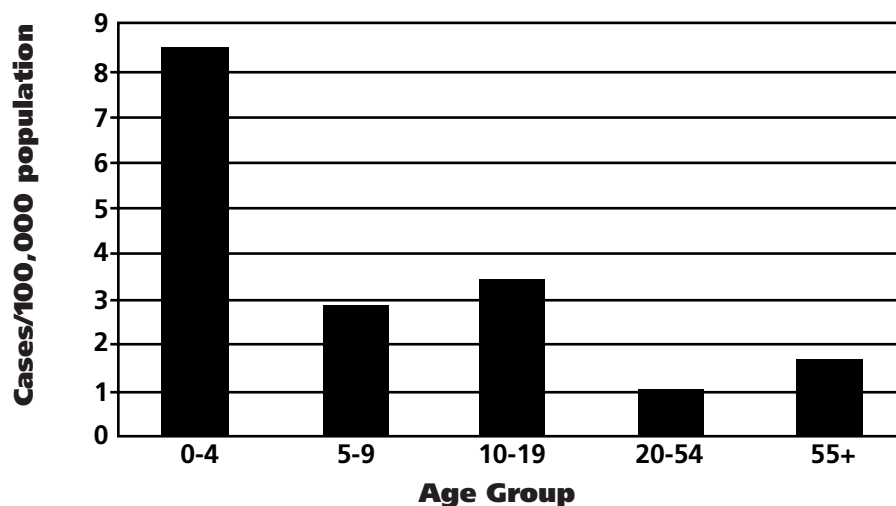
Disease caused by enterohemorrhagic *E. coli* is immediately notifiable in Washington. Our state continues to report high numbers of *E. coli* cases compared with other states. In 2001, Washington represented 4.6% of US cases, while the population of Washington is only 2.1% of the US total. This may be due to better identification and reporting of cases.

In 2002, 170 cases of enterohemorrhagic *E. coli* were reported to DOH, including 166 cases of *E. coli* O157:H7, 2 cases of *E. coli* O103:H2, and 2 cases of Shiga-like toxin producing *E. coli* with unknown serotype. This represents a 4% decrease in the number of reported cases compared to the 5-year average. There were no deaths associated with enterohemorrhagic *E. coli* infection.

Thirty-eight (22%) of the 170 reported cases were associated with a single outbreak in a Spokane County dance camp where pre-washed and bagged romaine lettuce was implicated as the source. One other outbreak was reported with 4 probable or confirmed cases.

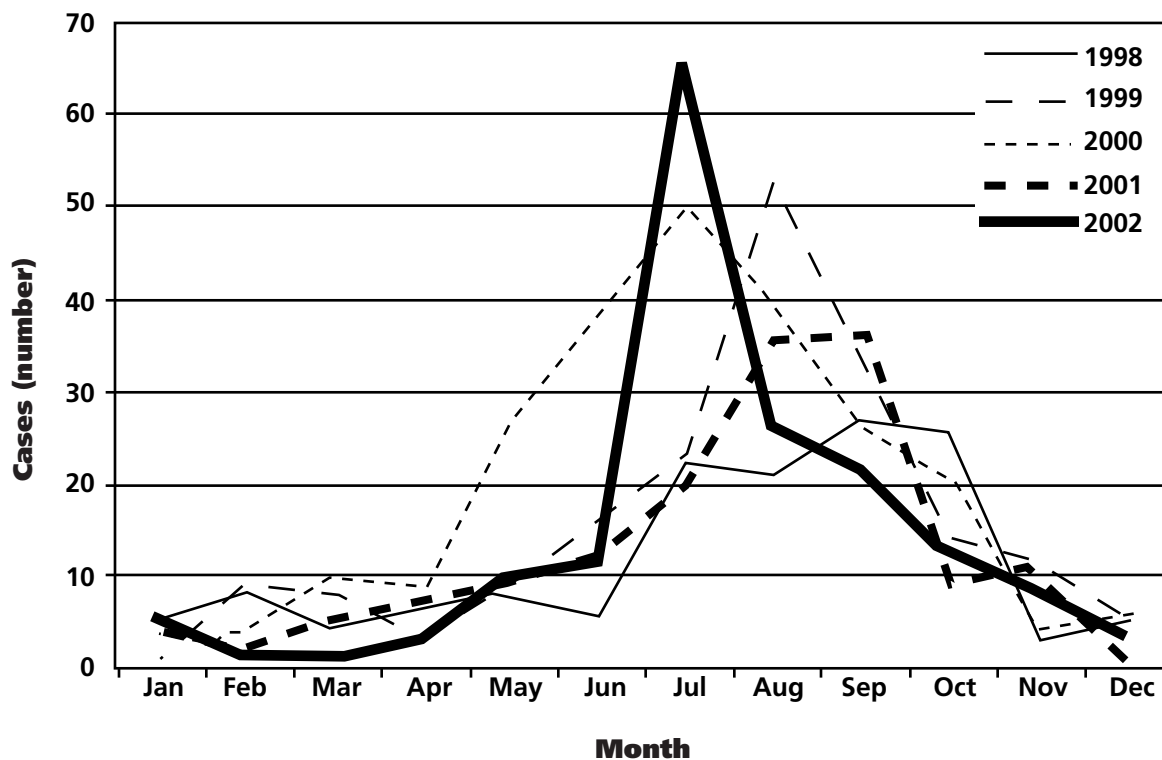
Among sporadic cases, men and women had similar rates of infection (2.3 cases and 1.9/100,000 population, respectively). Children under the age of five years had an elevated incidence (8.5/100,000), and are at the highest risk for developing HUS as a complication of infection; treatment with antibiotics may increase this risk.

Figure 10. *E. coli* O157:H7 - incidence by age group, 2002



Infection with enterohemorrhagic *E. coli* is seasonal, with cases most commonly occurring in summer months. In 2002, 38% of the reported cases had onset during the month of July, corresponding with the Spokane County outbreak.

Figure 10. *E. coli* O157:H7 - reported cases by month of onset, 1998-2002



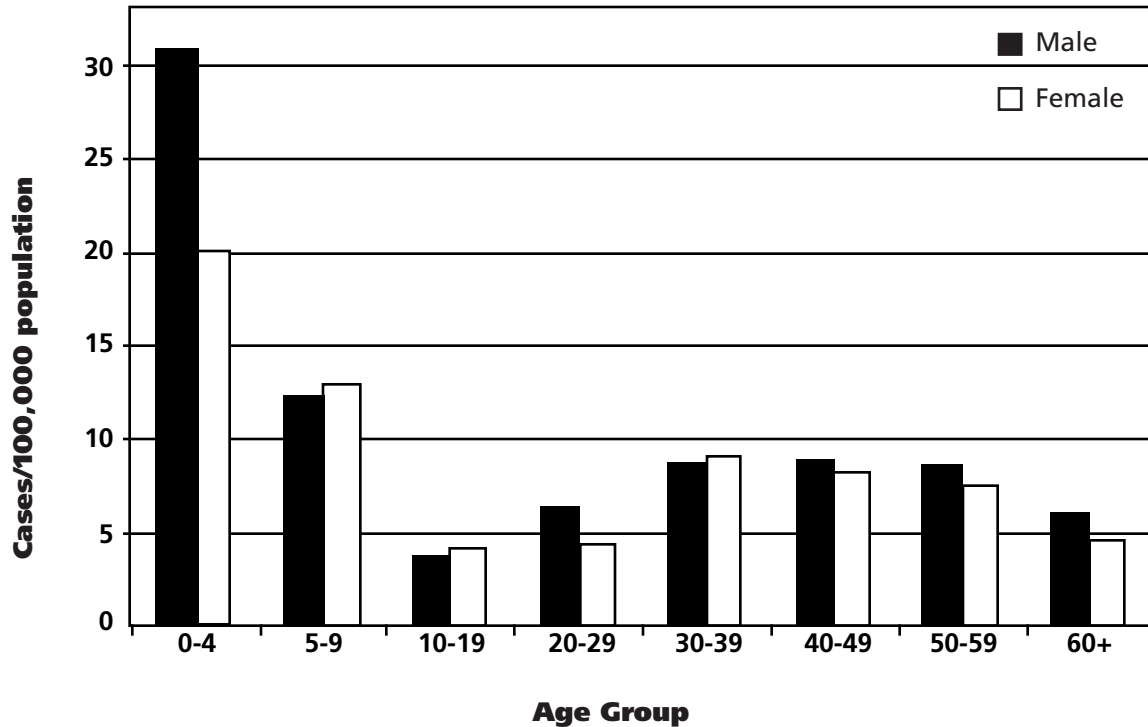
Incidence in Spokane and Whatcom counties were more than twice the statewide rate. High rates in Pend Oreille, Kittitas, and Walla Walla counties are based on small numbers. Seventeen counties reported no cases of enterohemorrhagic *E. coli*.

GIARDIASIS

Giardiasis is a diarrheal illness caused by *Giardia lamblia*, or less commonly *G. intestinalis* or *G. duodenalis*, a parasite that may be carried by humans or animals in the intestinal tract. Infection may be asymptomatic, or cause diarrhea, abdominal pain, nausea, and fatigue. Patients are infectious throughout their illness, which can be prolonged without treatment.

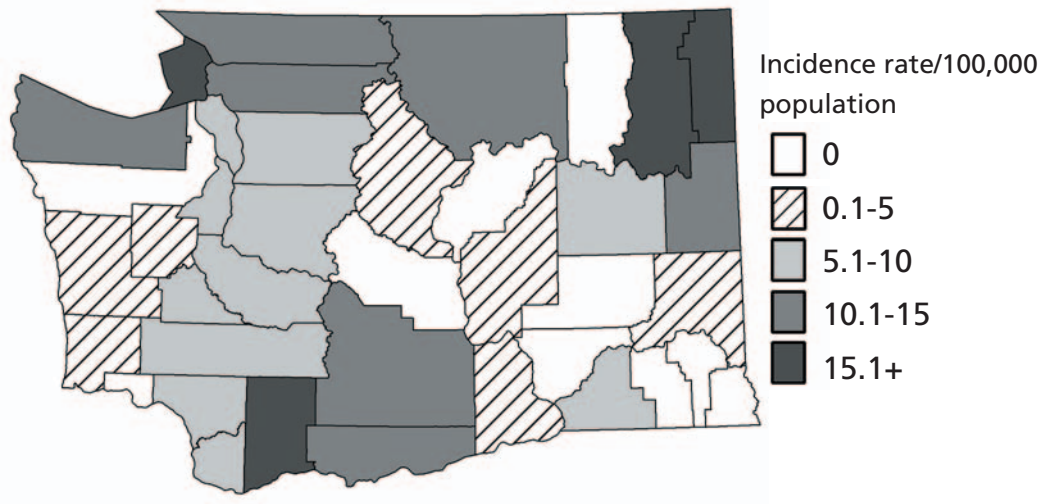
Giardia is spread by fecal-oral transmission through ingestion of contaminated drinking or recreational water or food. Person-to-person transmission can occur, especially among children in child care facilities, or by oral-anal sexual contact. During the summer, transmission is often related to swimming in rivers or lakes or through drinking untreated water while hiking or camping. *Giardia* is one of the most common causes of waterborne disease in the US.

Figure 12. Giardiasis - incidence by sex and age group, 2002



In 2002, 510 cases of giardiasis were reported (incidence 8.4 cases/100,000 population) from residents in 29 counties. No deaths were reported. The age-specific incidence was highest in children under 10 years of age (19/100,000). Thirty-three percent of cases had onset of illness in July, August or September. This coincides with recreational exposure to untreated water and vacation travel. In 2002, reported sources of exposure included immigration or out-of-state travel, 24%; drinking untreated water or camping and hiking, 20%; attending a child care facility, or having a household contact who attended or worked in a child care facility, 12%; infected sexual partners, 4%; contact with a confirmed case, or with animals, 3% each; and chronic illness, 3%. Thirty percent of cases reported no known exposures.

Figure 13. Giardiasis - incidence by county, 2002



GONORRHEA

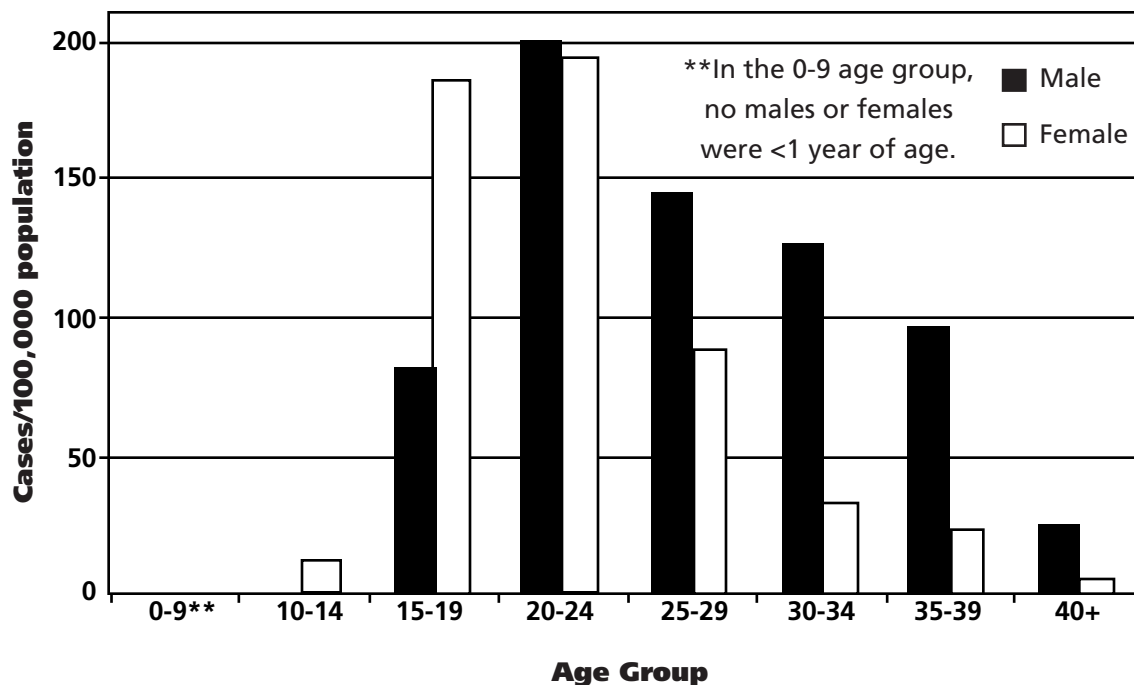
Gonorrhea is caused by the bacteria *Neisseria gonorrhoeae*, and is transmitted by sex with an infected partner. Infections may be asymptomatic, and only about 50% of women will have an abnormal vaginal discharge or painful urination. Men usually have a urethral discharge and pain on urination that may be severe. Infections may also cause conjunctivitis, pharyngitis or proctitis.

Certain strains of gonorrhea cause minimal initial symptoms and if untreated, can spread through the blood, causing arthritis, tenosynovitis, perihepatitis and petechial or pustular skin lesions. The most common complication of untreated gonorrhea in women is pelvic inflammatory disease (PID), which can result in infertility, ectopic pregnancy, and chronic pelvic pain. The most common complication in men is epididymitis. Gonococcal conjunctivitis may result from perinatal transmission but is rare in the US, where post-partum ocular prophylaxis is used (mandated in Washington). Epidemiologic studies provide strong evidence that gonococcal infections may facilitate HIV transmission.

Current recommendations for diagnosis and treatment of gonorrhea can be found in the Centers for Disease Control and Prevention (CDC) *2002 STD Treatment Guidelines*, available on the CDC website at www.cdc.gov/STD/treatment/. Selection of treatment requires consideration of the anatomic site of infection, the geographic area where the infection was acquired (flouroquinolone resistance is common in California, Hawaii, and regions of the Pacific Islands and Asia), and the possibility of concurrent *Chlamydia* infection.

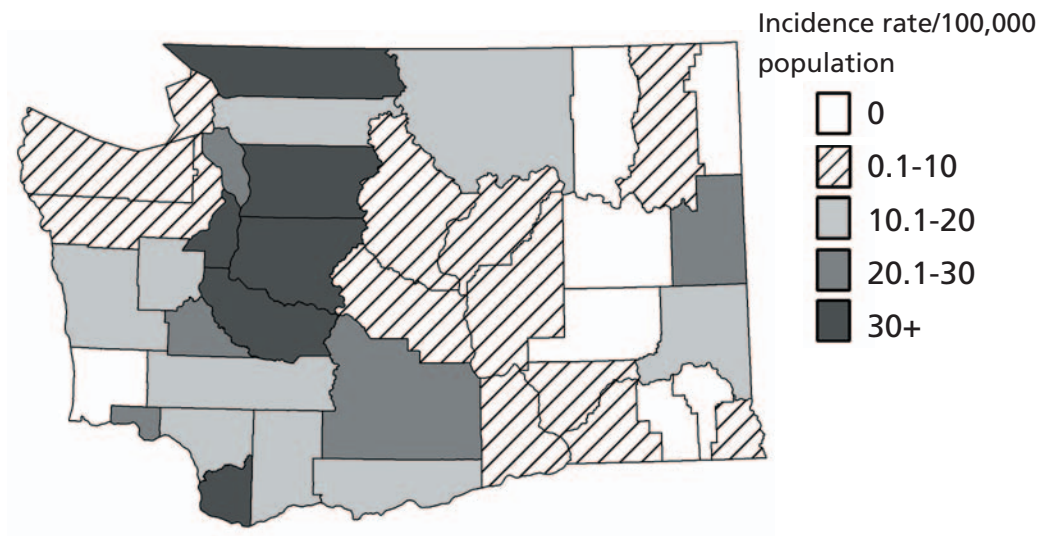
In 2002, 2,925 cases of gonorrhea (1,728 males and 1,197 females) were reported for an incidence of 48 cases/100,000 population; 666 (23%) were found to also have *Chlamydia*. Eighty-four cases of gonococcal PID were reported.

Figure 14. Gonorrhea - incidence by sex and age group, 2002



There were 7 counties with no reported cases of gonorrhea; King and Pierce counties accounted for 72% of the Washington morbidity. Pierce County had the highest incidence (88/100,000).

Figure 15. Gonorrhea - incidence by county, 2002



Gonorrhea incidence is highest among sexually active adolescents and young adults. The highest incidence for males occurs among those 20-24 (200/100,000) and 25-29 (144/100,000) years of age. The highest rates for females are among those 20-24 (193/100,000) and 15-19 (186/100,000) years of age.

Of 263 persons with recurrent gonococcal infection (>1 episode in a 12-month period), 21% (55) were teenagers. Seven percent of females with gonorrhea (85 of 1,197) had recurrent infection, a risk factor for infertility.

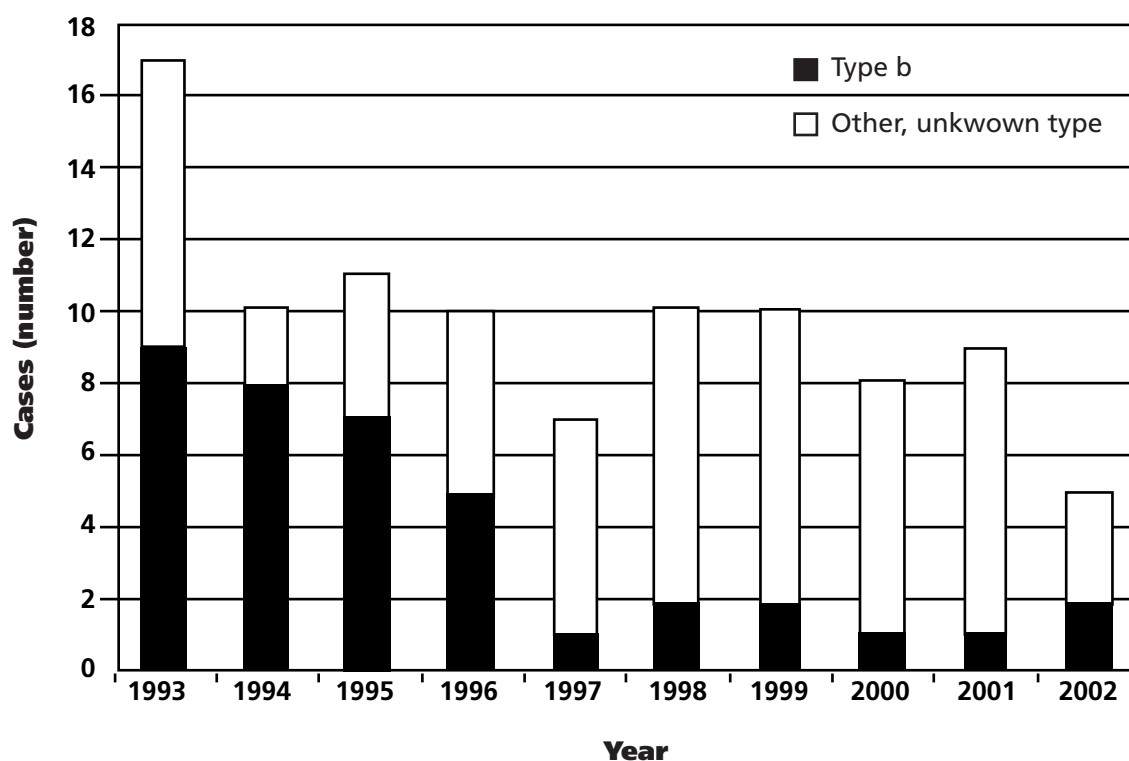
GRANULOMA INGUINALE

Granuloma inguinale (donovanosis) is a rare genital ulcer disease in the US, caused by the bacterium *Calymmatobacterium granulomatis*. The disease is endemic in some tropical and developing areas. Current recommendations for diagnosis and treatment of granuloma inguinale can be found in the CDC's 2002 STD Treatment Guidelines, available on the CDC website at www.cdc.gov/STD/treatment/.

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE

Haemophilus influenzae, a bacterium with 6 distinct capsular types (a-f) causes severe invasive disease, including meningitis, bacteremia, epiglottitis, pneumonia, and bone or joint infections. Humans are the only reservoir for *H. influenzae*. Transmission is by respiratory droplets and through contact with nasopharyngeal secretions. Children under 3 years of age are at particular risk for meningitis caused by *H. influenzae* type b (Hib), sometimes with fatal outcomes. About 10% of Hib meningitis results in permanent sequelae including hearing loss, paralysis, and other neurological damage. Since the widespread use of conjugate Hib vaccine in children, the incidence of invasive Hib in the US has fallen dramatically. Only cases occurring in children under 5 years of age are immediately reportable to local health jurisdictions and DOH.

Figure 16. *Haemophilus influenzae* - reported cases by capsular type, 1993-2002



Before vaccine was introduced in 1989, several hundred cases were reported annually in Washington. Fewer than 10 cases have been reported each year recently. In 2002, 5 cases of invasive *H. influenzae* infection were reported with no deaths. All cases were among children 2 years of age or younger: 2 were type b, one type c, one type f, and one nontypeable.

HANTAVIRUS PULMONARY SYNDROME

Hantavirus pulmonary syndrome (HPS) is a zoonosis caused by infection with Sin Nombre virus. Sin Nombre virus is carried by deer mice (*Peromyscus maniculatus*), which are found in rural areas throughout Washington and most of North America. Human exposure occurs by inhalation of dust contaminated with rodent excreta, which contains the virus. A prodrome of fever, headache, myalgias, fatigue, nausea and abdominal pain is followed by rapidly progressive respiratory distress with cardiovascular shock. Most cases require hospitalization and intensive care; there is no specific treatment available. About 35% of cases are fatal. Diagnosis of HPS can be confirmed by serological tests, immunohistochemical stains of tissue, or the detection of Sin Nombre virus in blood or tissue by nucleic acid testing methods.

HPS was first reported in Washington in 1994. Since that time, a total of 24 cases have been reported; 15 reported exposure in eastern Washington, 6 in western Washington, and 3 were exposed in multiple counties or out-of-state. Eight of the 24 (33%) cases were fatal. One case of HPS was reported in a Washington resident during 2002; they were likely exposed in western Washington.

HEMOLYTIC UREMIC SYNDROME

Hemolytic uremic syndrome (HUS) is a rare complication of certain infections. HUS most commonly occurs after infection with *E. coli* O157:H7 or other Shiga toxin producing bacteria. Cases with laboratory confirmation of an agent such as *E. coli* O157:H7, other Shiga toxin producing *E. coli*, or *Shigella* should be reported in the appropriate category. Cases without laboratory confirmation of a specific agent are reported as HUS.

Shiga toxin has several effects: hemolysis of red cells, destruction of platelets; and renal damage, which can cause renal failure. A case of HUS is defined as anemia with microangiopathic changes on peripheral smear and acute renal injury evidenced by hematuria, proteinuria, or elevated creatinine with no pathogen isolated if a stool culture had been obtained.

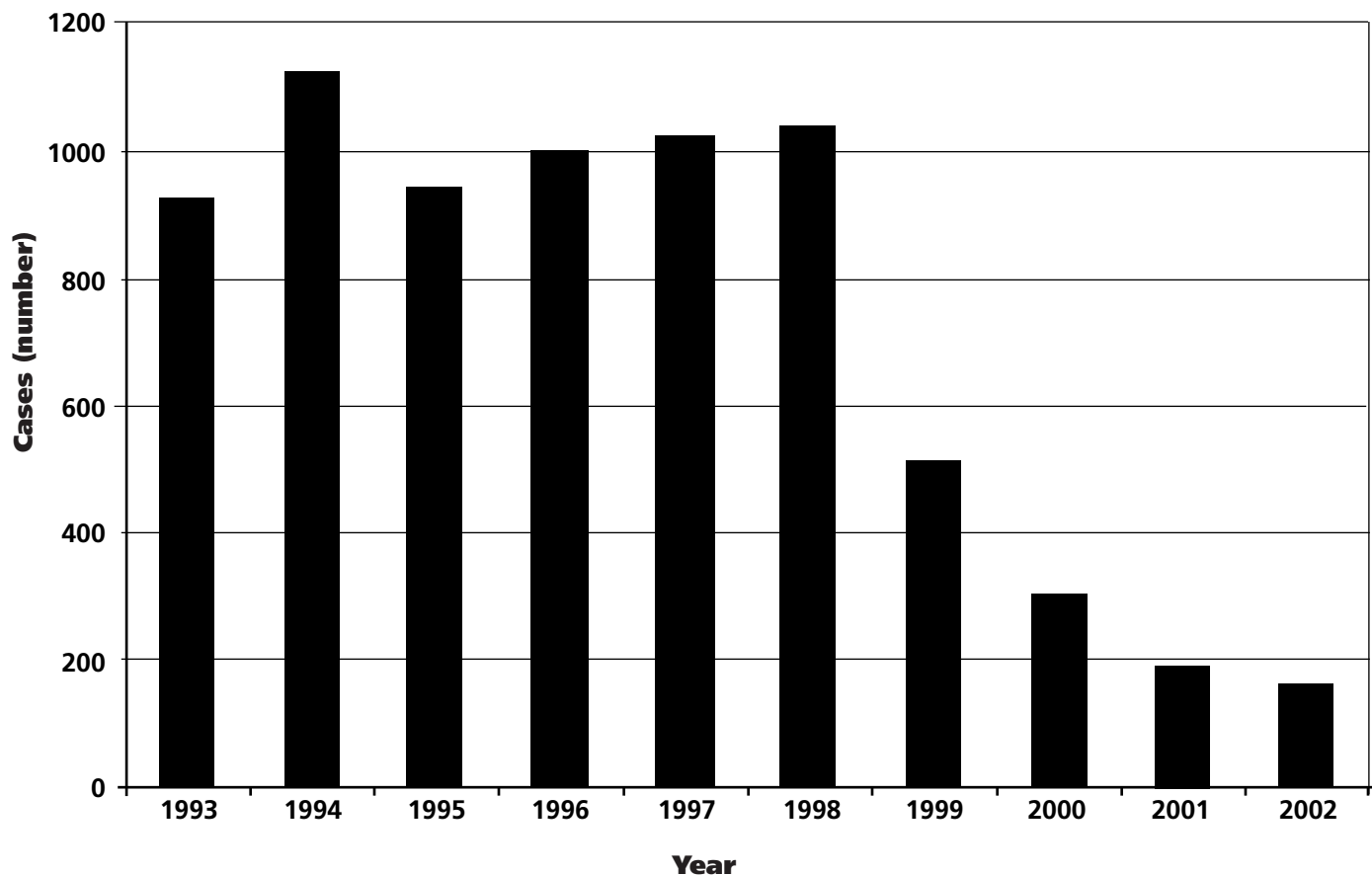
Most persons with HUS recover, but some may have permanent renal insufficiency or die from other complications. Neurological deficits or permanent pancreatic damage may occur. Children are at particular risk for developing HUS as a complication of a diarrheal illness caused by a Shiga toxin producing organism.

HUS was made immediately reportable in 2001. One case was reported in 2002, which was associated with exposure out-of-state.

HEPATITIS A

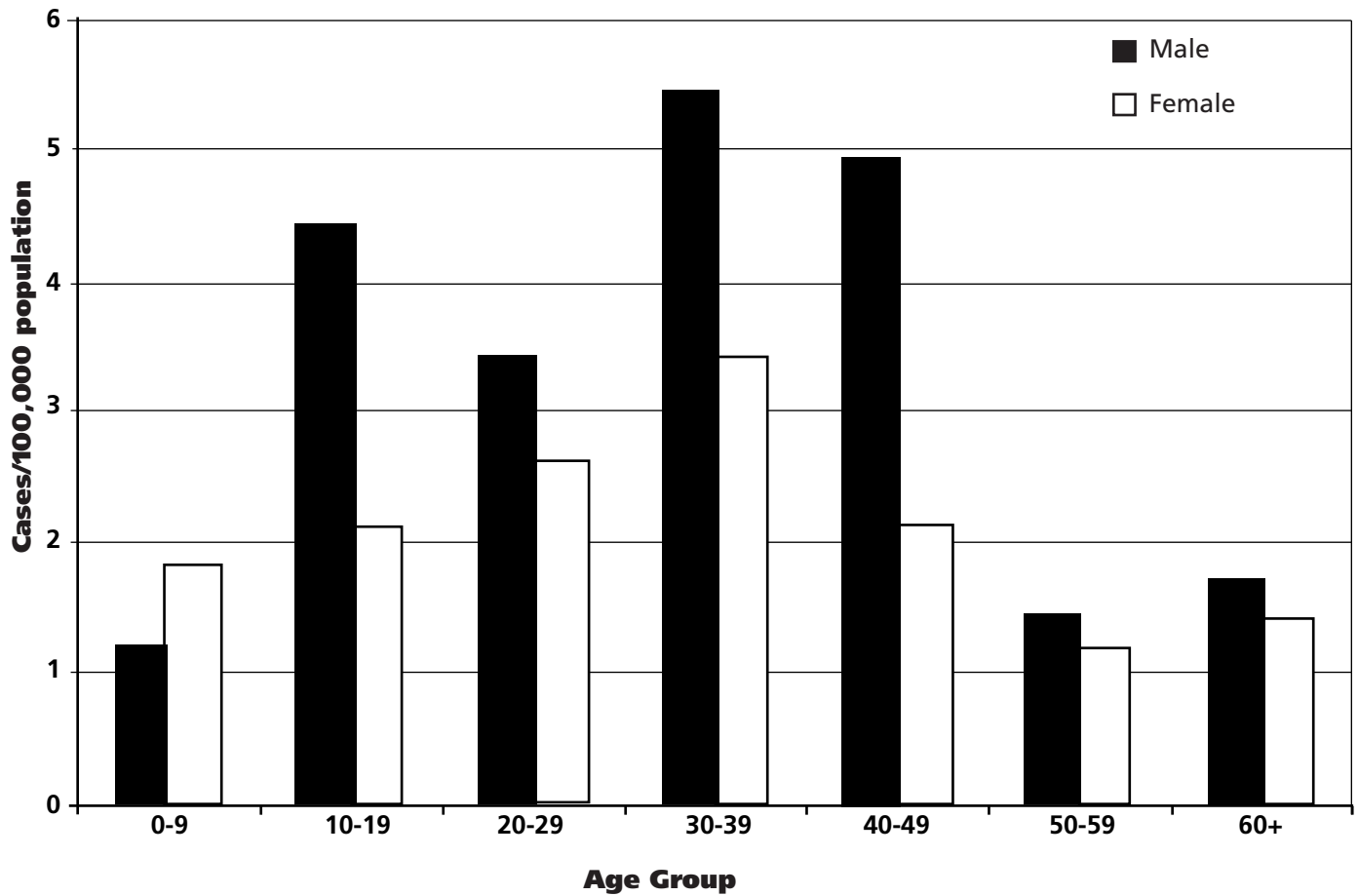
Infection with hepatitis A virus (HAV) may cause fever, anorexia, nausea, abdominal pain, and jaundice. Transmission occurs by the fecal-oral route, either person-to-person (including sexual contact) or by consumption of contaminated water or food, including raw or undercooked shellfish. The most common risk factors for exposure in the US include household or sexual contact with a person infected with HAV, but infection may also follow exposure in child care facilities, among injecting and non-injecting drug users, men who have sex with men, in communities with high rates of hepatitis A, and during travel to endemic areas. Infection with HAV confers lifelong immunity, and chronic hepatitis A infection does not occur. Hepatitis A vaccine prevents infection and is recommended for those at risk. Since the introduction of effective vaccines against HAV in 1995, the incidence has declined locally and in the US. Acute hepatitis A is immediately notifiable in Washington.

Figure 17. Acute hepatitis A - reported cases by year, 1993-2002



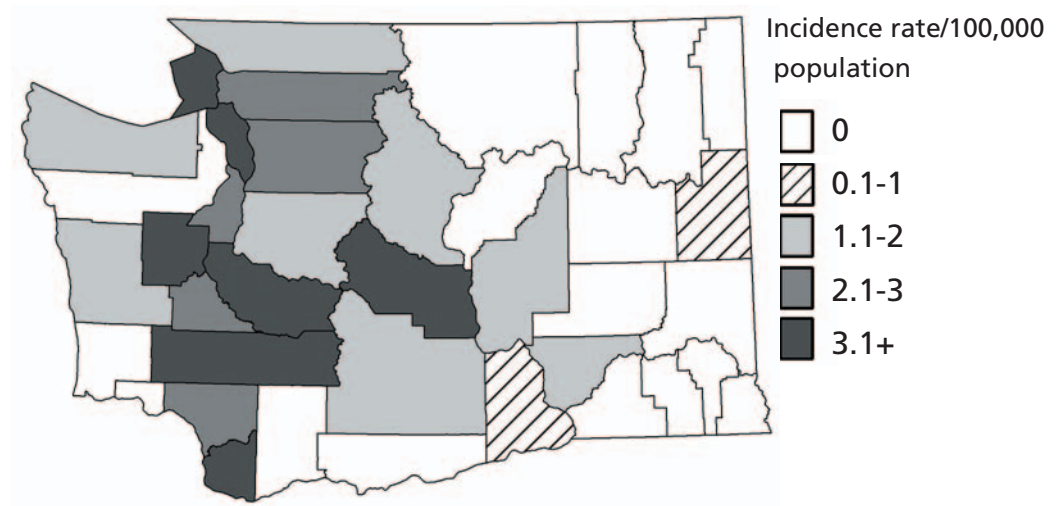
In 2002, 162 cases of acute hepatitis A were reported for an incidence of 2.7 cases/100,000 population and there were no reported deaths. The incidence of acute hepatitis A was higher among males (3.3/100,000) than among females 2.0/100,000) and those 30-49 years of age (4.4/100,000) compared with other age groups.

Figure 18. Acute hepatitis A - incidence by sex and age group 2002



Rates exceeding 6/100,000 occurred in Pierce and San Juan counties, however the rate in San Juan is calculated based on a single case.

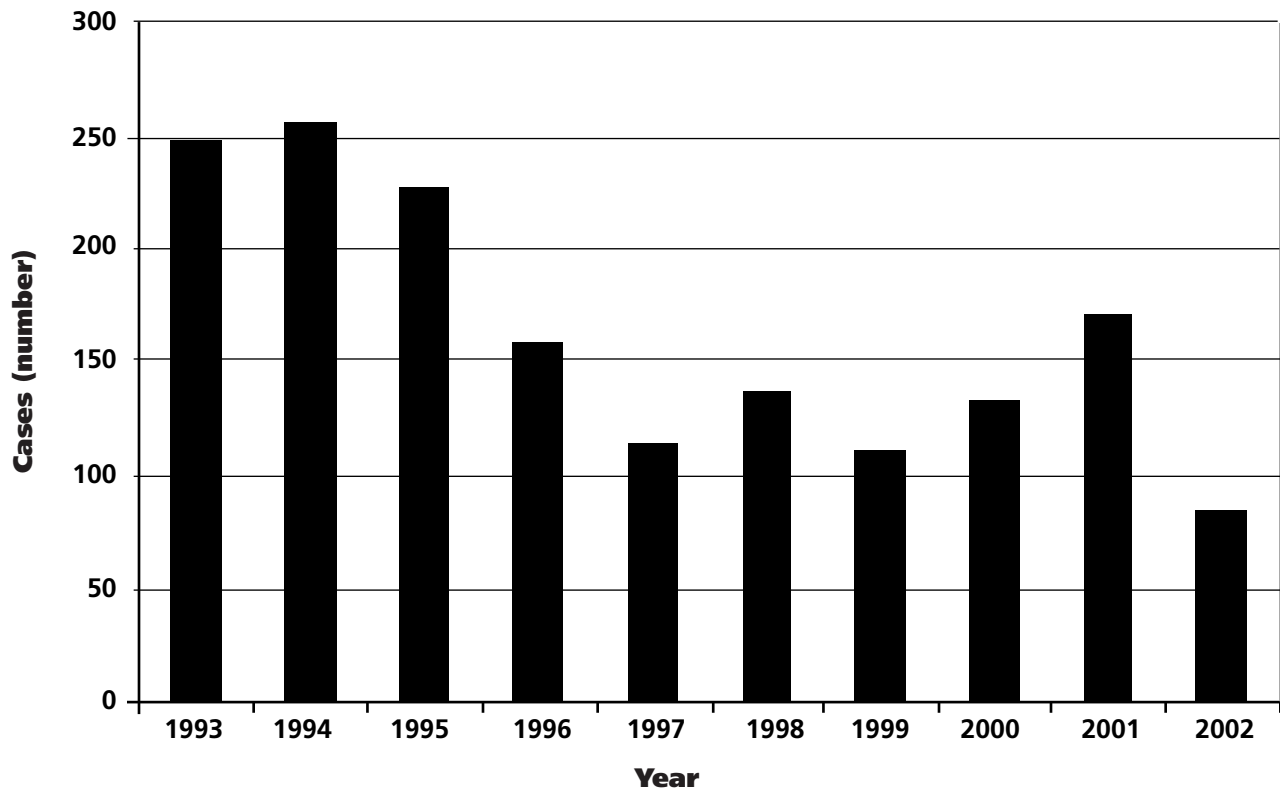
Figure 19. Acute hepatitis A - incidence by county 2002



HEPATITIS B

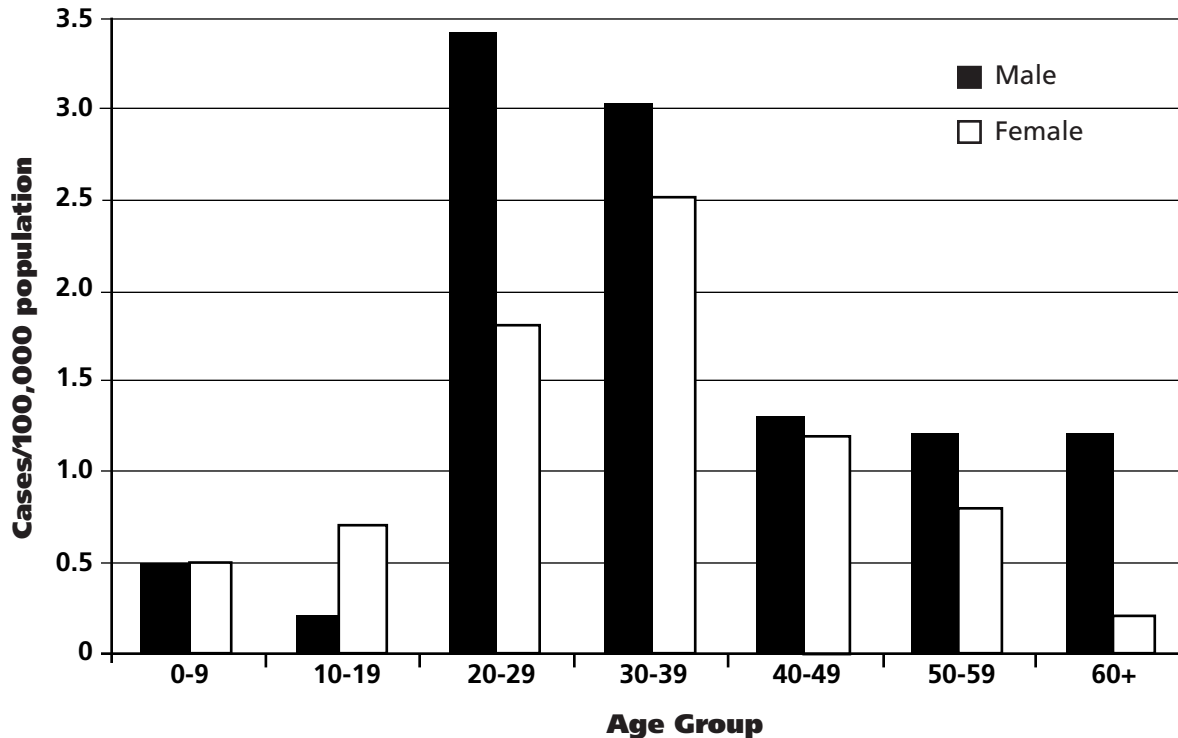
Infection with hepatitis B virus (HBV) causes acute and chronic disease; acute infection may be asymptomatic but fever, anorexia, nausea, abdominal pain, and jaundice can occur. Transmission occurs by exposure to blood or body fluids of an infected person during acute or chronic infection. The most common risk factor for hepatitis B in the US is sexual contact with a person infected with HBV, but the virus can also be transmitted by sharing injecting drug equipment and through perinatal and occupational exposures. In addition, the infection is more common among immigrants from endemic areas. HBV infection with recovery confers life-long immunity, however 10% of those infected will develop chronic HBV infection, which may lead to cirrhosis and hepatocellular carcinoma. Hepatitis B vaccine, available since 1981, prevents infection and is routinely recommended for children, adolescents, and for those at risk. Since the mid-1990s, the incidence of acute hepatitis B in the US and Washington has declined.

Figure 20. Acute hepatitis B - reported cases by year, 1993-2002



In 2002, 83 cases of acute hepatitis B were reported for an incidence of 1.4 cases/100,000 population, and there were no reported deaths. The rate of acute hepatitis B was higher among males (1.7/100,000) than among females (1.0/100,00) and those 30-49 years of age (2.8/100,000) compared with other age groups.

Figure 21. Acute hepatitis B - incidence by sex and age group 2002



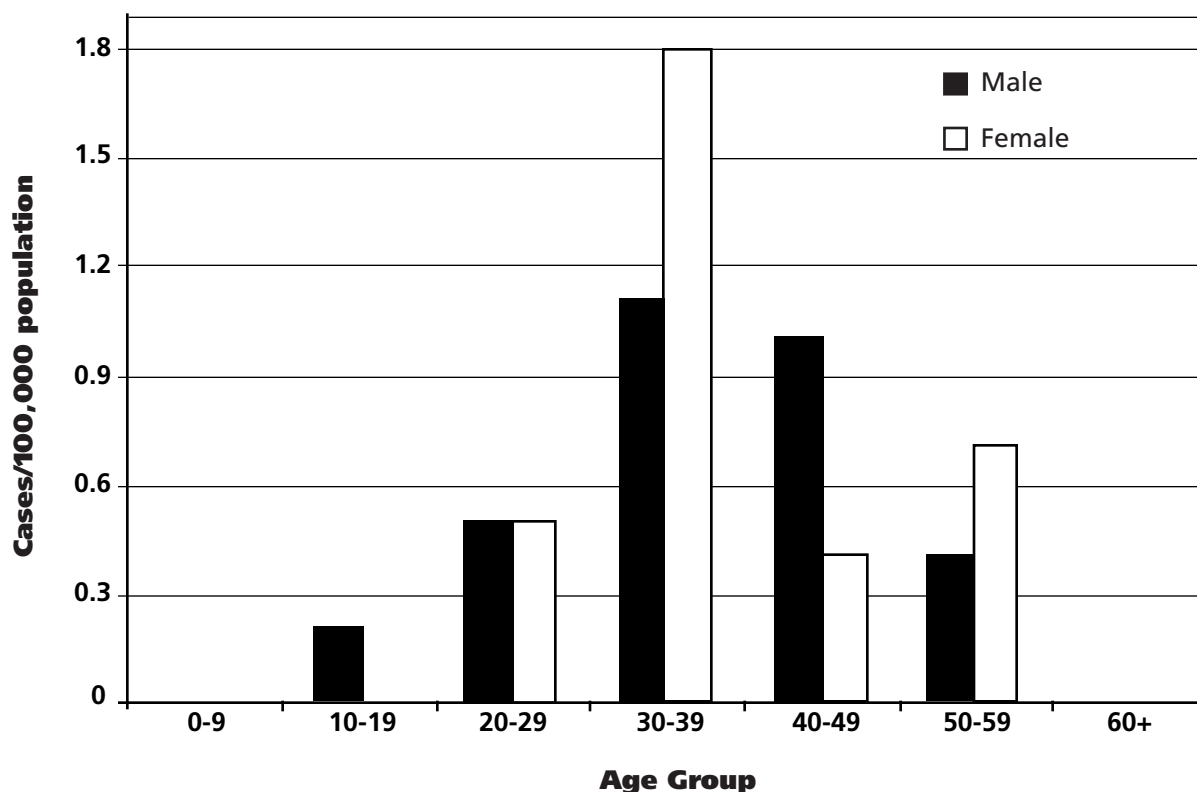
Rates exceeding 3/100,000 occurred in Cowlitz, Mason, Spokane, and Whatcom counties, however the rate in Mason is calculated based on 2 cases. Data on chronic HBV infection will be available for the 2003 Annual Communicable Disease Report.

HEPATITIS C

Infection with hepatitis C virus (HCV) causes acute and chronic disease; infection is typically asymptomatic but fever, anorexia, nausea, abdominal pain, and jaundice can occur. Transmission occurs by exposure to blood or body fluids of a person with acute or chronic infection. The most common risk factor for hepatitis C in the US is sharing injecting drug equipment with an infected person, but the virus can also be transmitted by sexual contact, and through perinatal and occupational exposures. About 85% of those infected will develop chronic HCV infection, which may lead to cirrhosis and hepatocellular carcinoma. About 1.8% of the US population has chronic hepatitis C, which is the most common indication for liver transplantation among adults in this country. There is no vaccine for hepatitis C, and current medical therapy has limited effectiveness, many side effects, and is expensive.

Chronic and acute hepatitis C became notifiable conditions in Washington in 2001, and acute hepatitis C was formerly classified as nonA, nonB hepatitis. In 2002, 27 cases of acute hepatitis C were reported for an incidence of 0.4 cases/100,000 population, and there were no reported deaths. The rate of acute hepatitis C was higher among males (0.5/100,000) than among females (0.4/100,00) and those 30-49 years of age (1.4/100,000) compared with other age groups.

Figure 22. Acute hepatitis C - incidence by sex and age group 2002



It is likely these numbers seriously underestimate the incidence of hepatitis C, as most infections are not recognized, diagnosed, or reported to public health jurisdictions. Rates exceeding 2/100,000 occurred in Adams and Pacific counties, however these rates were calculated based on a small number of cases. Data on chronic HCV infection will be available for the 2003 Annual Communicable Disease Report.

HEPATITIS, UNSPECIFIED (INFECTIOUS)

This immediately notifiable condition includes causes of infectious hepatitis other than hepatitis A, B, or C. Examples of conditions that should be reported in this category include other causes of viral hepatitis, such as delta hepatitis virus, hepatitis D, E, and G. In 2002, no cases of unspecified (infectious) hepatitis were reported.

HERPES SIMPLEX, GENITAL AND NEONATAL

Herpes simplex virus (HSV) infections can be caused by two serotypes of the virus, HSV-1 and HSV-2. Genital herpes is a recurrent, life-long viral infection usually caused by herpes simplex virus type 2 (HSV-2). The prevalence of HSV-2 among adults in the US approaches 25%, and about one million people are newly infected each year. Herpes can be transmitted by an infected person with no noticeable symptoms. People with oral herpes can transmit the infection during oral-genital or oral-anal sex, and perinatal infections can occur, even in the absence of genital symptoms.

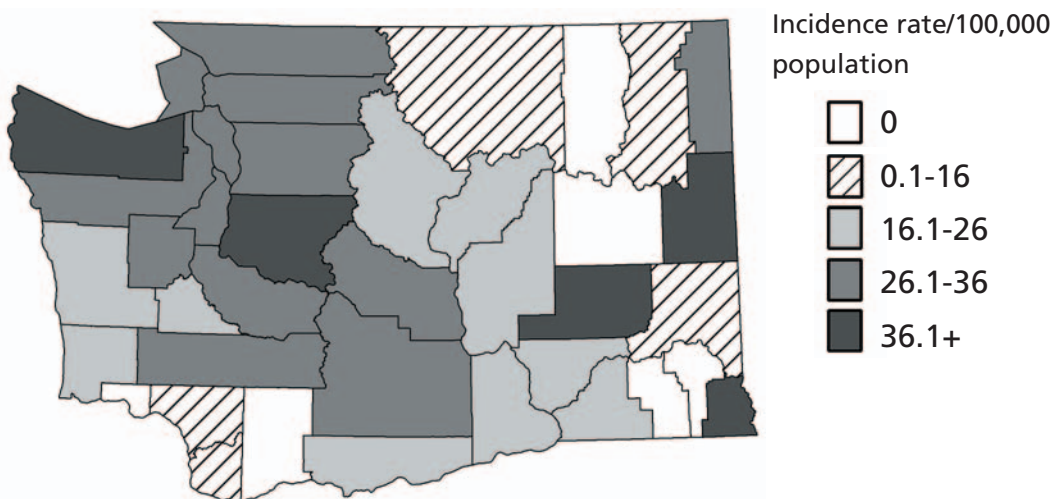
Asymptomatic infections are common and symptoms of genital herpes vary widely, however, first episodes may be quite severe with painful genital ulcerations, malaise and fever. Symptoms can recur at the initial infection site, and the cause of reactivation is unknown. Genital herpes, like other genital ulcer diseases, increases the risk of acquiring HIV.

Current recommendations for diagnosis and treatment of HSV can be found in the CDC's *2002 STD Treatment Guidelines*, available on the CDC website at www.cdc.gov/STD/treatment/. Diagnosis of herpes is made through clinical observations of typical lesions and/or by laboratory confirmation. Antiviral drugs partially control the frequency and severity of outbreaks, however, they are not a cure.

Only a patient's first disease episode or neonatal infections are notifiable in Washington. In 2002, 1,914 cases of genital herpes (573 males and 1,341 females) were reported, an incidence of 32 cases/100,000 population. Included in the total are 6 neonatal infections. This compares to 1,833 (35/100,000) cases (3 neonatal) in 2001.

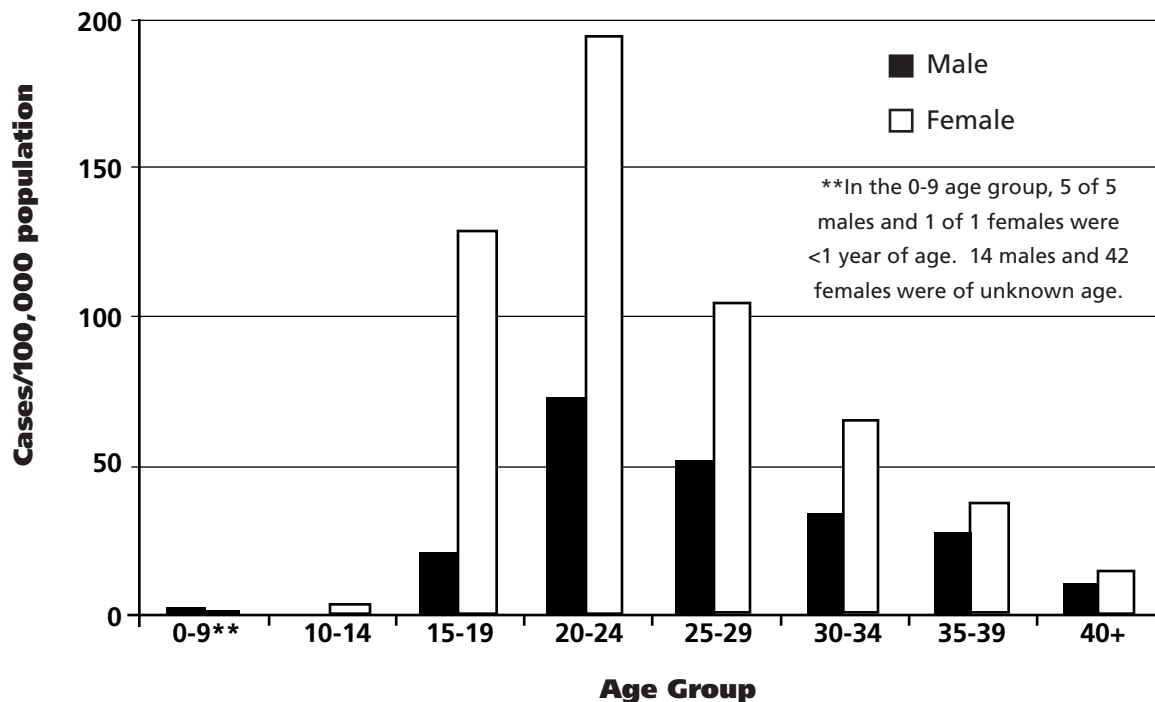
Four counties (King, Pierce, Snohomish, and Spokane) accounted for 67% of the total.

Figure 23. Herpes simplex - incidence by county 2002



The highest age-specific incidence occurred among females 20-24 years of age (195/100,000) followed by females 15-19 years of age (128/100,000).

Figure 24. Herpes simplex - incidence by sex and age group 2002



HIV INFECTION/AIDS

Acquired Immunodeficiency Syndrome (AIDS) is caused by infection with human immunodeficiency virus (HIV), a retrovirus that attacks the immune system and causes a gradual, progressive depletion of CD4+ T-lymphocytes, which are crucial for immune function. Without effective treatment, the resulting immunodeficiency causes susceptibility to opportunistic infections and malignancies; immunodeficiency becomes more severe over time and usually ends in death. Recent developments in HIV treatment, including combination, highly active antiretroviral therapy (HAART) has considerably improved the prognosis for patients with HIV infection, but the long-term effects of these drugs are unknown.

The CDC case definition for AIDS requires one of 26 indicator conditions (Table 5) or a low CD4+ T-lymphocyte count (<200 cells/ μ l or <14% of total lymphocytes) in the absence of symptomatic illness. Since the introduction of HAART in 1996, reporting of AIDS has become a less reliable indicator of trends in HIV infection, as patients' outcomes improve and they no longer develop AIDS-defining immunodeficiency and/or diseases. September 1999, the DOH Board of Health mandated HIV reporting, and through December 31, 2002, 3,393 cases of HIV infection (not AIDS) were reported to DOH. A description of these data will be presented; however, rates are calculated based only on reported adolescent and adult AIDS cases for 2002.

Table 5. CDC case definition: AIDS-indicator diseases

Candidiasis of bronchi, trachea, or lungs
Candidiasis, esophageal
Cervical cancer, invasive
Coccidioidomycosis, disseminated or extrapulmonary
Cryptococcosis, extrapulmonary
Cryptosporidiosis, chronic intestinal (>1 months duration)
Cytomegalovirus disease (other than liver, spleen or lymph nodes)
Cytomegalovirus retinitis (with loss of vision)
Encephalopathy, HIV-related
Herpes simplex: chronic ulcer(s) (>1 month duration; or bronchitis, pneumonitis, or esophagitis)
Histoplasmosis, disseminated or extrapulmonary
Isosporiasis, chronic intestinal (>1 month duration)
Kaposi's sarcoma
Lymphoma, Burkitt's (or equivalent term)
Lymphoma, immunoblastic (or equivalent term)
Lymphoma, primary, of brain
Lymphoma, primary, of brain
Mycobacterium avium complex or *M. kansasii*, disseminated or extrapulmonary
M. tuberculosis, any site (pulmonary* or extrapulmonary)
M. species, disseminated or extrapulmonary
Pneumocystis carinii pneumonia
Pneumonia, recurrent
Progressive multifocal leukoencephalopathy
Salmonella septicemia, recurrent
Toxoplasmosis of brain
Wasting syndrome due to HIV

In 2002, 457 cases of AIDS were reported in Washington, a 13% decrease from cases reported in 2001. While the number of cases fluctuates annually, the trend has been leveling, reflecting the trends seen nationally. Declines in morbidity and mortality seen in the 1990s following the introduction of HAART appear to be attenuated by several factors, including treatment-resistant viral strains; late HIV testing; inadequate access to, and adherence to, treatment; and recent increases in HIV and STD incidence in some risk groups.

The incidence of AIDS was 7.6 cases/100,000 population, which is lower than the US rate of 14.7/100,000 (50 states and the District of Columbia, 2001 data). AIDS cases were reported from 30 counties. For counties with at least 5 cases, the highest incidence was in King (15.5/100,000), followed by Clark (8.8/100,000), Snohomish (5.1/100,000), Thurston (4.7/100,000) and Whatcom (4.6/100,000).

Of the 457 AIDS cases reported, 393 (86%) occurred among males and 64 (14%) among females. Men who have sex with men (MSM) continued to account for the majority (56%) of all AIDS cases reported. Among adult and adolescent males, 301 cases (77%) were MSM, with or without concurrent injection drug use (IDU). Injection drug use alone accounted for 33 (8%) cases among men, and 45 cases (11%) were MSM who also used injection drugs. Risk was unreported or unconfirmed in 34 cases (9%).

From 1987 to 2001, the proportion of AIDS cases among women increased from 2-15%. Among adult and adolescent women with AIDS reported in 2002, 35 (55%) acquired HIV infection through heterosexual contact, and 14 (22%) reported IDU. Risk was unreported for 15 (23%) women. For both males and females, age-specific incidence rates were highest among persons 30-39 years of age (39.3/100,000 for men and 6.3/100,000 for women).

As in previous years, racial/ethnic minorities were disproportionately represented among AIDS cases. Whites accounted for a majority (68%) of cases reported, but from 1987 to 2002, the proportion of cases among minorities grew from 11%-32%. African Americans were particularly overrepresented with 79 cases (17%); Hispanics for 43 (9%) cases, Asians for 13 cases (3%), and Native Americans for 9 cases (2%).

Of the 457 AIDS cases, 34 are known to have died as of September 1, 2002. HAART use has markedly increased survival among AIDS patients diagnosed since 1995. In 2002, the numbers of persons living with AIDS in Washington rose to the highest number ever (4,689), an increase of 7% from the previous year.

In addition to AIDS, 605 cases of HIV were reported in 2002. Thirty-five percent of these cases were not newly diagnosed, but were prevalent cases diagnosed prior to 1999. Patients recently diagnosed and reported as having HIV infection may have been infected weeks to years in the past.

Of the 605 HIV infections reported in 2002 from 24 Washington counties, 382 (63%) were reported from King, followed by Pierce with 47 cases (8%) and Snohomish with 34 cases (6%).

The majority of cases (87%) were male. For adult and adolescent males, the primary mode of exposure was male-to-male sexual contact (391 cases, 75%), followed by IDU (34 cases, 6%) and the two risks combined (48 cases, 9%). Twenty-seven cases (5%) reported no identified risk (NIR). For adult and adolescent females, heterosexual sexual contact was the mode of exposure for 45 cases (58%); 15 cases (19%) reported IDU and 18 cases (23%) reported NIR.

Similar to AIDS cases, whites made up the majority of HIV cases (438 cases, 73%) and some racial/ethnic minorities are disproportionately represented. African Americans accounted for 86 (14%) of cases, Hispanics for (9%) 53 cases, Asians for 15 cases (3%), and Native Americans for 7 cases (1%).

LEGIONELLOSIS

Legionellosis is caused by infection with *Legionella* species, primarily *L. pneumophila*. It is estimated that up to 18,000 people in the US get legionellosis each year with a mortality rate of 5-30%. *Legionella* is found in soil, natural bodies of water, and water systems where warm (90°–105° F), stagnant water allows the organisms to reproduce in high numbers. Infection has followed inhalation of contaminated aerosols from showers, hot water tanks, cooling towers and whirlpool spas. There is no person-to-person transmission.

Legionellosis causes atypical pneumonia, with fever, myalgias, headache, fatigue, anorexia, and occasionally diarrhea and abnormal liver function tests. Risks for infection include increasing age, smoking, chronic lung disease, renal insufficiency, diabetes, or immune deficiency. Pontiac fever is probably an allergic reaction to bacterial antigens, with fever and myalgias, but no pneumonia.

In 2002, there were 8 cases of legionellosis (0.1 cases/100,000 population) with 3 deaths in Washington, fewer than in recent years. All 8 cases had identifiable risk factors for legionellosis. King county reported 5 cases with one each reported from Clark, Ferry, and Lewis counties. Seven cases had infection with *L. pneumophila* and one case had *L. bozemanii*.

LEPTOSPIROSIS

Leptospirosis is a zoonotic bacterial disease caused by *Leptospira interrogans*. Infections may be asymptomatic, but leptospirosis is usually characterized by fever, headache, myalgias, conjunctival injection, and less frequently, meningitis, rash, jaundice, or renal insufficiency. Cases are often misdiagnosed as meningitis, encephalitis or influenza. Clinical illness lasts a few days to weeks.

LISTERIOSIS

Listeria monocytogenes is found in soil and water and can be transmitted to humans through contaminated food. *Listeria* can be found in a variety of raw foods, such as uncooked meats, fruits, vegetables, and unpasteurized milk or foods made with unpasteurized milk. Processed foods such as soft cheeses or cold cuts can become contaminated during or after processing. Fetal or neonatal infections may occur during maternal infection. Listeriosis is an immediately notifiable condition in Washington.

In 2002, 11 cases of listeriosis (incidence 0.2 cases/100,000 population) were reported with no deaths, essentially unchanged from previous years in Washington. Five cases occurred in individuals over 60 years of age and one occurred in a neonate. Risk factors reported included malignancy, multiple chronic illnesses, and undiagnosed illness during pregnancy.

LYME DISEASE

Lyme disease is a bacterial disease caused by *Borrelia burgdorferi*, inoculated during the bite of an infected *Ixodes* tick. In the Pacific Northwest, the western black-legged tick (*Ixodes pacificus*) is responsible for transmitting the disease. Only a small percentage of tick bites will result in human infection; those infected may be asymptomatic or may develop an erythematous rash with central clearing (erythema migrans) with fever, headache, and myalgias or arthralgias. Without treatment, the bacteria may spread and cause arthralgias, arthritis, neuritis, myocarditis, skin and mental status changes. Lyme disease generally occurs during warm weather when ticks are active and humans engage in outdoor activities such as hiking or camping.

In the past 10 years, 4-18 cases of Lyme disease were reported annually with about 30% reporting out-of-state exposure. In 2002, 12 cases (incidence 0.2 cases/100,000 population) were reported in Washington with no deaths. About half of the cases reported out-of-state exposures, with the rest exposed in western Washington (Clark, Grays Harbor, Lewis, San Juan and Snohomish counties) from June through September.

LYMPHOGRANULOMA VENEREUM

Lymphogranuloma venereum (LGV) is a rare genital ulcer disease in the US, usually caused by the L1, L2 and L3 serovars of *Chlamydia trachomatis*. LGV is characterized by genital lesions, suppurative regional lymphadenopathy, or hemorrhagic proctitis. The infection is usually sexually transmitted. LGV is common in tropical and subtropical areas and endemic in parts of Asia and Africa.

Current recommendations for diagnosis and treatment of LGV can be found in the CDC's *2002 STD Treatment Guidelines*, available on the CDC website at: www.cdc.gov/STD/treatment/. In Washington, the last case of LGV was reported in 2000.

MALARIA

Malaria is a mosquito-borne parasitic infection caused by one of 4 species of parasites (*Malaria falciparum*, *M. vivax*, *M. malariae* and *M. ovale*) that infect *Anopheles* mosquitoes. Humans are the only important reservoir for malaria, which occurs in tropical and subtropical regions where the *Anopheles* mosquito vectors are present. Symptoms of malaria include cyclic fevers, sweats, rigors, and headache; some infections, particularly those caused by *M. falciparum*, may have life-threatening complications and require prompt treatment. Malaria is diagnosed by detection of malaria parasites on specially stained blood films.

Travelers can take prophylaxis to prevent malaria. Prevention and treatment of malaria can be complicated due to increasing levels of resistance to antimalarial drugs in some regions. Updated prophylaxis recommendations for travelers are available from travel clinics and the CDC website (www.cdc.gov).

In the absence of travel to a malaria-endemic area, autochthonous malaria is extremely rare in the US because vector mosquitoes are no longer endemic. Case counts in Washington vary from year to year and typically 20-45 cases are reported annually. The 26 cases reported in 2002 occurred among immigrants and travelers arriving from Africa, Asia, and Central America.

MEASLES (RUBEOLA)

Measles is a viral rash illness characterized by the acute onset of fever, coryza, conjunctivitis, cough, and oral lesions (Koplik spots), followed by an erythematous maculopapular rash that begins on the face and becomes generalized. The virus is transmitted by airborne and respiratory droplets routes. The infectious period extends from 4 days before until 4 days after the onset of rash, and illness usually lasts 7-10 days. Complications include otitis media, pneumonia, croup and encephalitis, and may occur in all age groups. However, measles is most severe in infants and adults.

Diagnosis is made by serologic testing, viral isolation from nasopharyngeal secretions or urine, or identification of viral antigen in blood or tissues. Measles can be prevented by vaccination (measles-mumps-rubella vaccine [MMR]), and endemic measles has been eliminated in the US. Recent cases in the US have been imported from endemic areas or spread from an imported case. Measles is an immediately notifiable condition in Washington.

In Washington in 2002, there was one confirmed case of measles, in an eight-month old child who entered the US through adoption from China.

MENINGOCOCCAL DISEASE

Infection with the bacterium *Neisseria meningitidis* may result in bacteremia (meningococcemia), pneumonia, or meningitis (meningococcal meningitis). Meningococcal meningitis is frequently accompanied by a petechial rash and may be complicated by purpura fulminans, with peripheral gangrene and multiorgan system failure. About 10% of cases are fatal even if treated with appropriate antibiotics. *N. meningitidis* can be distinguished by their capsular polysaccharides, and there are 13 pathogenic serogroups, with serogroups B, C, and Y causing the most disease in the US.

N. meningitidis is carried in the nasopharynx of about 15% of the healthy population. Transmission occurs by respiratory droplets and through contact with nasopharyngeal secretions. Risk groups for meningococcal disease include infants and young children, household and other close contacts of infected persons, residents in congregate settings (e.g., military recruits or college freshmen living in dormitories), and microbiologists working with isolates of *N. meningitidis*. Exposure to tobacco smoke, including second-hand smoke may increase the risk of illness. There is a vaccine that protects against four serogroups of *N. meningitidis*, but not serogroup B. The vaccine is used to control outbreaks of serogroup C meningococcal disease and has been recommended by some colleges and universities for incoming freshmen. Meningococcal disease is an immediately notifiable condition in Washington.

In 2002, there were 76 cases of meningococcal disease (incidence: 1.3 cases/100,000 population) with 8 deaths. Rates in Washington have been similar for several years but are typically higher than elsewhere in the US. Higher incidence in Pacific, Whitman, and Benton counties were based on small numbers.

The highest rate was among children less than one year of age (16.5/100,000) and 1-4 years of age (5.6/100,000), both elevated compared with 2001. The incidence of meningococcal disease does not significantly vary by age in individuals 5 years of age and older (0.8 /100,000).

In the US, serogroups B and C account for about 60% of meningococcal disease. Most infections in Washington are caused by serogroup B. Serogroup Y has increased nationwide over the past decade and in 2002, accounted for 21% of Washington cases. There was also an increase in serogroup C infections. Pneumonia is more common with serogroup Y; 3 of 6 cases of meningococcal pneumonia were due to serogroup Y *N. meningitidis*.

Table 6. *Neisseria meningitis* by percentage of serogroups 1993-2002

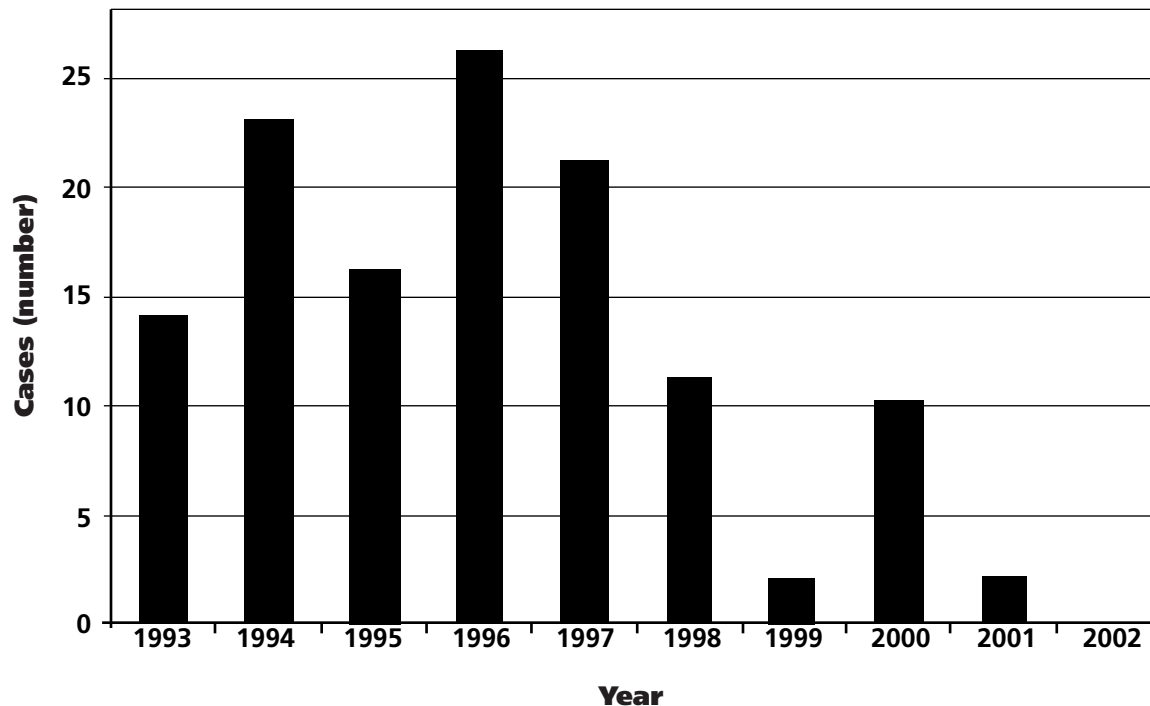
Year	B%	C%	Y%	Other(%)	Unknown (%)
1993	51	29	4	3	14
1994	52	18	9	4	17
1995	60	13	6	5	16
1996	57	24	14	0	5
1997	51	17	18	4	10
1998	56	18	16	1	9
1999	47	12	27	2	12
2000	42	3	27	4	14
2001	41	17	25	3	14
2002	33	32	21	4	11

MUMPS

Mumps is an acute viral disease characterized by fever and swelling of the salivary glands, typically the parotids. Transmission may be airborne, by respiratory droplets, or through direct contact with nasopharyngeal secretions. Complications of mumps infection among individuals who are past puberty include orchitis and oophoritis. Other rare complications include infertility, arthritis, renal involvement, thyroiditis, and hearing impairment.

Once a virtually universal infection, mumps incidence decreased in the US due to routine childhood immunization with MMR. In the past 5 years, fewer than 25 cases have occurred annually in Washington. There were no cases of mumps reported in Washington during 2002.

Figure 27. Mumps -reported cases by year 1993-2002



PARALYTIC SHELLFISH POISONING

Paralytic Shellfish Poisoning (PSP) is caused by eating shellfish containing a toxin produced by the phytoplankton *Alexandrium catenella*. Bivalve mollusks, such as clams, oysters, mussels and geoduck, ingest the algae and concentrate the toxin. "Red tide," is a misnomer as PSP is rarely associated with reddish discoloration of the water.

Symptoms begin within minutes or hours of eating poisonous shellfish, and may include paresthesias of the mouth and extremities, and nausea. Severe poisoning progresses rapidly to paralysis, respiratory arrest and death. In milder cases, symptoms resolve within hours to days and recovery is complete. PSP should be suspected when a patient has compatible symptoms and has consumed food that is likely to be contaminated. Confirmation requires detection of the toxin in the implicated food.

In Washington, prevention of PSP includes surveillance of recreational and commercial shellfish harvest areas for biotoxins using laboratory testing. Areas with dangerous levels of toxin are closed to harvesting. PSP can be present in dangerous amounts even when the water looks clean, and cooking does not inactivate the toxin. Updates on affected sites and closures, which may not always be posted with signs, are available at the DOH Marine Biotoxin Hotline (800)562-5632, or Food Safety and Shellfish Program website: <http://www.doh.wa.gov/ehp/sf/BiotoxinProgram.htm>. In Washington, PSP is an immediately notifiable condition.

Two clusters of PSP have been reported in Washington within the past 10 years: 7 cases in 2000 and 5 in 1998. All cases from both clusters were associated with consumption of mussels taken from South Puget Sound waters. No cases of PSP were reported in Washington in 2002.

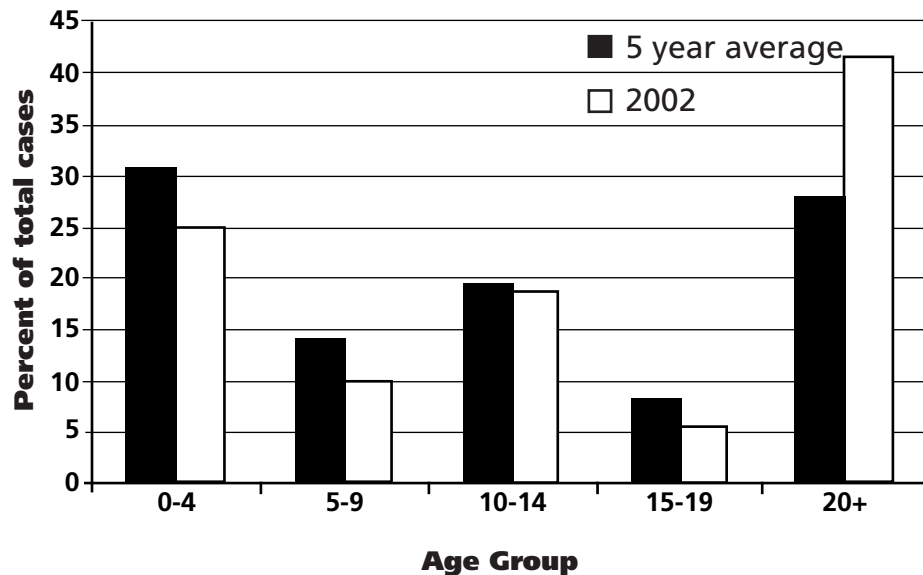
PERTUSSIS

Pertussis is a vaccine-preventable respiratory illness resulting from infection with the bacillus *Bordetella pertussis*. Transmission of *B. pertussis* occurs through respiratory droplets. Classically, pertussis is characterized by episodes of forceful, repetitive coughing followed by an inspiratory whoop and vomiting, although these symptoms may be absent in infants under 6 months of age or partially immune adolescents and adults. In partially immune adolescents and adults, pertussis may cause mild or atypical respiratory illness; in this population, the diagnosis may not be recognized, allowing disease transmission to populations at risk for serious disease. Symptoms may last months and rare but serious complications may occur, including pneumonia, encephalopathy and death. Infants under 6 months are at greatest risk for complications.

Routine childhood immunization against pertussis combined with early recognition and treatment or prophylaxis of infection is essential for disease control. Diphtheria, tetanus and acellular pertussis (DtaP) vaccine is not recommended for individuals over 7 years of age, and adolescents and adults are at risk for pertussis due to waning immunity. Infections among adults and adolescents are an important factor for disease transmission to nonimmunized young children. Pertussis is an immediately notifiable condition in Washington.

In Washington, 575 cases (incidence: 9.5 cases/100,000 population) of pertussis were reported in 2002, representing a 3-fold increase from the number reported in 2001; no deaths were reported. Sixteen suspected or confirmed pertussis outbreaks were reported in 2002, including 8 in health care settings. In 2002, pertussis peaked in February, May and October. Yakima, Cowlitz and Skagit counties had rates more than twice the state average. The high rate in Skamania County is based on small numbers.

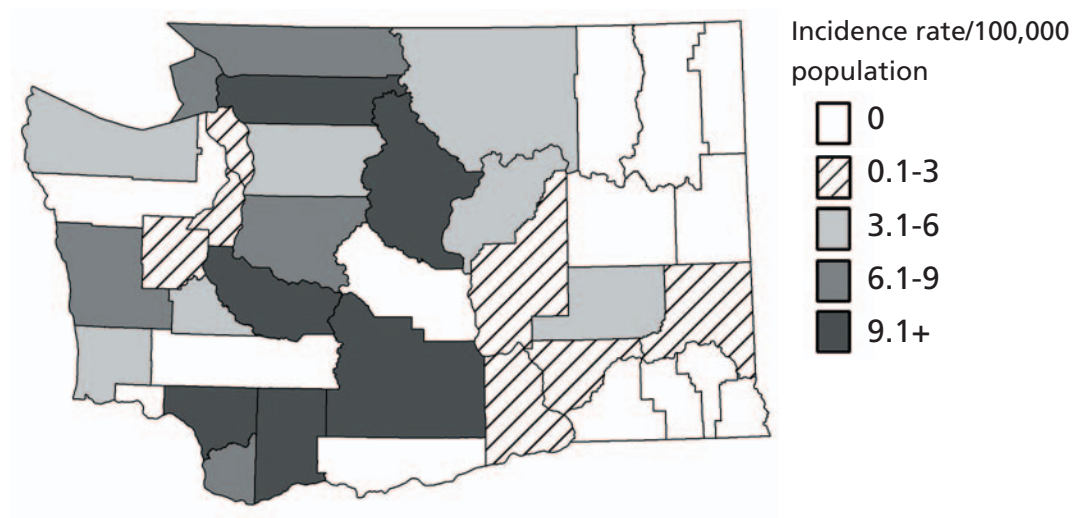
Figure 28 - Pertussis - percentage of reported cases in 2002 by age group, compared to average percentage by age group reported 1998-2



Pertussis incidence by gender was comparable among children and adults >54 years of age, however, the rate among females 20-54 years of age was five times higher than among males of the same age (11.1/100,000 compared to 2.3/100,000). This difference may be due to a combination of factors, including increased exposure to children with pertussis and more willingness by infected women to seek medical care.

Infants under one year of age had a high incidence of pertussis: 115/100,000. Most of the cases reported in that age group were among infants under 6 months of age, who represented 12% of all reported cases while those aged 6 to 11 months comprised 2% of all cases. Eleven percent of all cases occurred among children 1-4 years of age, 10% among children 5-9 years of age, and 24% among adolescents 10-19 years of age. Adults >20 years of age comprised 41% of all reports, an increased proportion compared with previous years.

Figure 29 - Pertussis - Incidence by county, 2002



Cough, with an average duration of 8 days, was reported by 99% of persons with pertussis. Other symptoms included vomiting (55%), apnea (41%) and whooping (25%). Seizures (reported by 1% of cases) and encephalitis (0) were uncommon.

Laboratory confirmation of pertussis requires identification of *B. pertussis* in nasopharyngeal specimens by culture or polymerase chain reaction (PCR) methods. Direct fluorescent antibody (DFA) assay of nasopharyngeal secretions has low sensitivity and specificity, and false negatives and false positives occur. Of the 575 cases reported, 282 were tested by both DFA and culture methods. The testing methods agreed a little more than half of the time (52%).

Pertussis – results for samples tested by DFA and culture (N = 282), 2002

	DFA Positive	DFA Negative
Culture Positive	18%	28%
Culture Negative	20%	34%

The number of cases of pertussis in 2002 corresponds to a 27% increase from the average number of cases over the last five years, with a higher proportion of infected adolescents and adults compared to previous years.

PLAGUE

Plague is a bacterial zoonosis caused by *Yersinia pestis*. Plague is established in enzootic foci in small wild mammals in the western US. Transmission to humans occurs by inoculation (e.g., flea or animal bite, handling infected animal tissues) or less commonly by inhalation. There are three clinical plague syndromes: bubonic with fever, headache, nausea, and unilateral lymph node swelling; septicemic, with bacteremia, coagulopathy, and multiorgan system failure; and pneumonic, with pneumonia. Early recognition and appropriate antimicrobial treatment is essential for a good outcome. Plague is a potential agent of bioterrorism, and is immediately notifiable in Washington.

In the early 1900s, plague was probably widespread in rats and their fleas around Washington ports. The last reported human case in Washington occurred in 1984 in an animal trapper in Yakima County. Limited serosurveys of coyotes in Washington indicate that enzootic activity is ongoing at a low level, however, the distribution is unknown.

POLIOMYELITIS

Poliovirus is the infectious agent causing poliomyelitis, a disease characterized by acute flaccid paralysis. The last naturally-acquired case of indigenous (wild-type) polio in the US occurred in 1979, and the last in Washington in 1977. Sporadic cases linked to use of live oral polio vaccine occurred here as recently as 1993. Inactivated, parenteral polio vaccine is now recommended to eliminate vaccine-associated paralytic polio (VAPP). In the US, there have been less than 15 cases/year of polio for the last 20 years; all were VAPP, and none were wild-type polio. Polio is an immediately notifiable condition in Washington. No cases of poliomyelitis were reported in Washington in 2002.

PSITTACOSIS

Psittacosis, caused by the bacterium *Chlamydophila psittaci*, is generally a mild to moderately severe respiratory illness with fever, chills, headache, cough and myalgias. Psittacosis may be serious if untreated, especially among the elderly. *C. psittaci* is carried by a variety of birds kept as pets, livestock, or in zoos or aviaries, and may not necessarily cause illness in these birds. Transmission to humans occurs through inhalation of the organism in dried bird droppings, secretions or dust.

Psittacosis is generally sporadic and the diagnosis may be missed. Outbreaks have occurred affecting households, aviaries, pet shops and other locations housing birds. Reporting individual cases of psittacosis to public health agencies is important for the prevention of additional human cases by the identification of birds carrying *C. psittaci*. No cases of psittacosis were reported in Washington in 2002.

Q FEVER

Infection with the Protobacteria *Coxiella burnetii* results from inhalation of airborne *C. burnetii* in dust contaminated by placental tissues, birth fluids and excreta of infected animals. Reservoirs include sheep, cattle, goats, dogs, cats and some wild animals. The symptoms are nonspecific and may be prolonged: fever, chills, headache, weight loss, and malaise, with or without hepatosplenomegaly. Chronic infection may cause endocarditis and hepatitis. The last case of Q Fever in Washington occurred in 1999, there were no cases reported in 2002.

RABIES

Rabies is an acute infection of the central nervous system caused by a neurotropic rhabdovirus of the genus *Lyssavirus*. All mammals, including humans, are susceptible to rabies.

In humans, rabies causes a rapidly progressive and invariably fatal encephalomyelitis. Even with intensive care, rabies almost always progresses to coma or death within 20 days of onset. Non-specific early symptoms include paresthesias, sore throat, anorexia, fever, and malaise. Neuropsychiatric symptoms may include anxiety, agitation, lethargy, confusion, hallucinations, seizures, dysphagia, paralysis, and coma. There is no treatment for rabies, and death is most often due to respiratory failure.

The incubation period in humans is usually 2-12 weeks, but there have been documented incubation periods of more than a year. Factors influencing the length of incubation include: amount of viral inoculum, anatomic location of exposure, the variant of rabies virus, and the thoroughness of post-exposure wound cleansing. Bites of infected animals constitute the most important route of transmission, but less common exposures include viral inoculation into an open wound or mucous membrane. Transplanted corneas from patients with fatal undiagnosed rabies have caused infection in recipients. Rabies is immediately notifiable in Washington.

In Washington, bats are the primary source of rabies, which appears to be rare among terrestrial (ground-dwelling) animals. Canine rabies still accounts for the majority of human rabies worldwide. Travelers to rabies-endemic countries should be warned to seek medical care if they are bitten by any mammal, especially a dog. Detailed information about animal rabies in Washington, can be found in Appendix III: Rabies Exposure. An account of rabies occurring in a domestic Washington cat in 2002 is included in Appendix IV: Special Topics.

There have been two cases of human rabies recognized in Washington in the last decade. In 1995, a 4 year-old child died of rabies 4 weeks after a bat was found in her bedroom (MMWR 1995;44:625-7). In 1997, a 64 year-old man was diagnosed with rabies more than 6 weeks post-mortem (MMWR 1997;46:771-2). As with most endemically-acquired rabies in the US, these two Washington residents were infected with a bat variant of rabies virus despite the lack of history of a bat bite in either case.

RARE DISEASES OF PUBLIC HEALTH SIGNIFICANCE

Suspected or confirmed cases of rare diseases of public health significance are immediately notifiable in Washington. This allows public health agencies to identify rare diseases associated with emerging infections, travel, or those which are unusual but endemic in Washington. In 2002, there were 3 diseases reported under this category: babesiosis, dengue fever, and Rocky Mountain spotted fever.

Babesiosis is a potentially fatal infection caused by multiple species of the *Babesia* parasite. Babesiosis symptoms include fever, chills, myalgias, fatigue, hemolytic anemia, and renal insufficiency. Babesiosis is most severe in asplenic persons. The parasite is transmitted to humans by the bite of infected *Ixodes* ticks. Ticks are infected with *Babesia* from an animal reservoir (rodents or cattle, depending on the *Babesia* species). In 2002, an 87 year-old, asplenic Kitsap County resident survived an infection with a *Babesia divergens*-like parasite. He reported no travel outside the county for months prior to his illness (see Appendix IV: Special Topics for further description).

Dengue fever is an acute illness caused by a mosquito-borne flavivirus endemic to tropical areas of Asia, Australia, Africa, and Latin America. Dengue is characterized by the acute onset of fever, headache, myalgias, arthralgias, retro-orbital pain, anorexia, gastrointestinal symptoms and rash. Recurrent infection may result in a severe illness, dengue hemorrhagic fever, which causes hemorrhagic phenomena and hypovolemic shock. In 2002, a 32 year-old Washington man developed fatal dengue hemorrhagic fever a week after returning from Mexico.

Rocky Mountain spotted fever (RMSF) is a tick-borne disease caused by *Rickettsia rickettsii*, and is characterized by acute onset of fever, chills, malaise, myalgias, headache, conjunctival injection and a "classic" maculopapular rash that begins on wrists and ankles and spreads to the trunk and face (may be absent in 20% of cases). The disease is carried by *Dermacentor* and *Amblyomma* ticks and is distributed across the US, but is most common in the southeastern and south-central states. In 2002, a Washington resident developed a severe headache, fever, myalgias and malaise four days after removing a tick while camping in Stevens County and was subsequently confirmed to have RMSF.

RELAPSING FEVER

Tick-borne relapsing fever is a bacterial zoonosis caused by several different species of *Borrelia*, a spirochete. The principal vectors are *Ornithodoros* soft ticks which transmit *Borrelia* from wild rodent reservoirs to humans. Soft ticks feed during the night, inflicting a painless and often undetectable bite. Humans are often exposed while camping or staying overnight in rustic cabins. Symptoms include recurrent episodes of high fever (up to 105°F), headache, myalgias, fatigue and drenching sweats. A transient petechial rash may also occur. Periods of fever lasting 2-9 days alternate

with afebrile periods of 2-4 days. There may be up to 8 relapsing episodes. Diagnosis of relapsing fever can be made by identification of *Borrelia* on a peripheral blood smear, and appropriate antimicrobial treatment is curative. Relapsing fever is immediately notifiable in Washington.

In most years, less than 10 cases of tick-borne relapsing fever are reported in Washington residents, and during 2002, 7 cases were reported. The most common exposures include camping or staying in cabins in eastern Washington or out-of-state. Of the 7 cases reported in 2002, 6 had exposure information and only one had an exposure in Washington.

RUBELLA, INCLUDING CONGENITAL

Rubella is a rare, mild, febrile rash illness that is prevented by routine immunization with MMR. It is caused by the rubella virus, which is spread by airborne transmission or respiratory droplets. Symptoms include a generalized maculopapular rash accompanied by slight fever and lymphadenopathy. Adults may have arthralgias or frank arthritis. The most serious complication of rubella occurs during pregnancy when infection may lead to congenital rubella syndrome, resulting in multiple abnormalities of the brain, eye, ear, and internal organs. Most cases of rubella in the US are now reported among young adults who emigrated from areas where rubella is endemic. Rubella is immediately notifiable in Washington.

Diagnostic tests for rubella include serology, virus isolation, or identification of viral antigen in blood or tissues. Congenital infection is confirmed by serology.

In 2002, two cases of rubella were confirmed in Washington. The unvaccinated index case had traveled to an endemic country and developed rubella after return to the US. The second case was epidemiologically linked to the index case.

SALMONELLOSIS

Salmonellosis is an enteric bacterial infection caused by myriad *Salmonella* species, which can be distinguished by serotype. Salmonellosis is characterized by the acute onset of fever, diarrhea, nausea, and abdominal pain, with or without vomiting. Illness is usually mild to moderately severe, resolving after several days, but may be severe in the very young, elderly, or those with chronic illnesses. *Salmonella* are transmitted by the fecal-oral route, and the bacteria may be shed in the feces of humans and animals for days to months, even years. Animals (especially reptiles, chickens, cattle, dogs, and cats) can carry *Salmonella* chronically and be a source of human infection, but most human salmonellosis results from ingestion of contaminated food. Most outbreaks have resulted from ingestion of inherently contaminated food or food contaminated by infected food handlers. Person-to-person transmission is rare. Salmonellosis is immediately notifiable in Washington.

Figure 28 - Salmonellosis - incidence by county, 2002

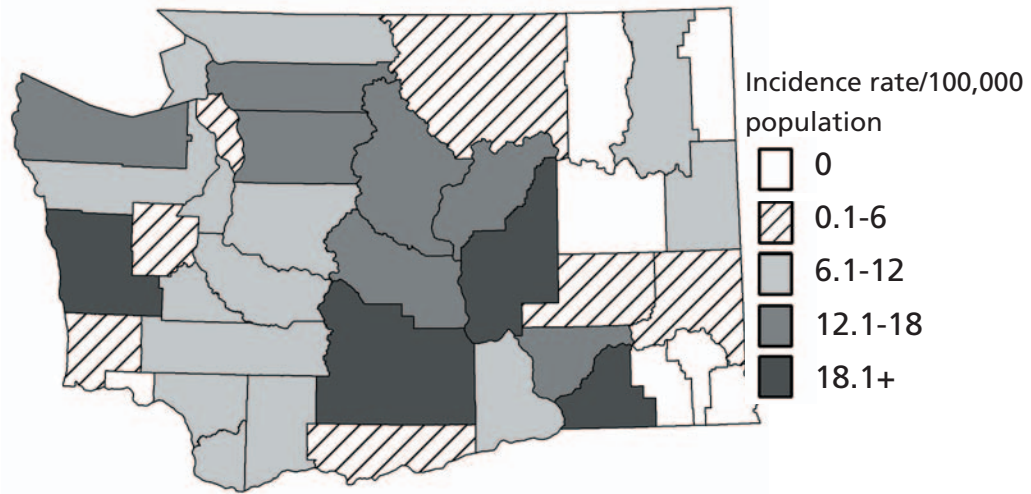
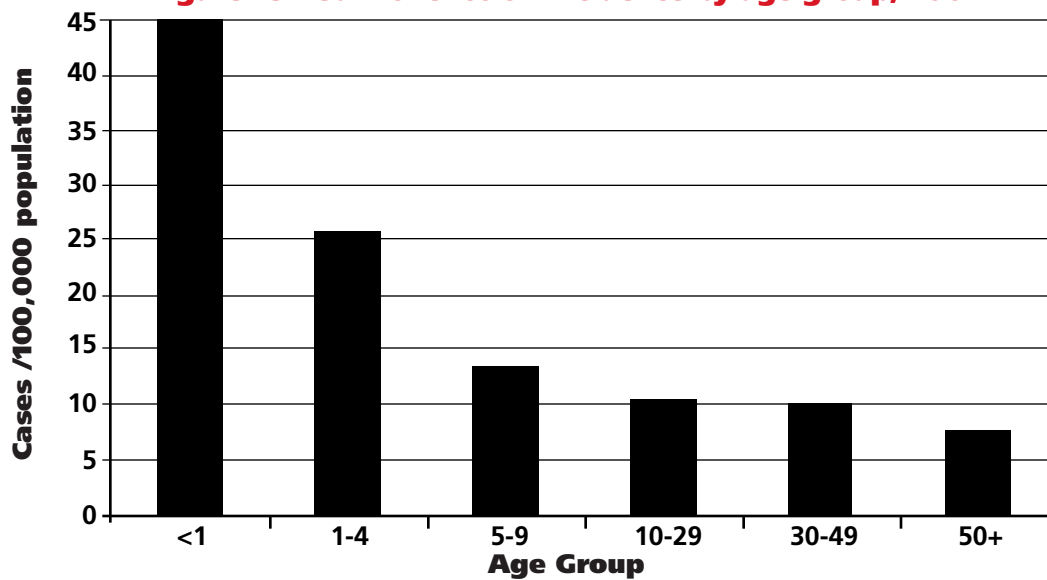
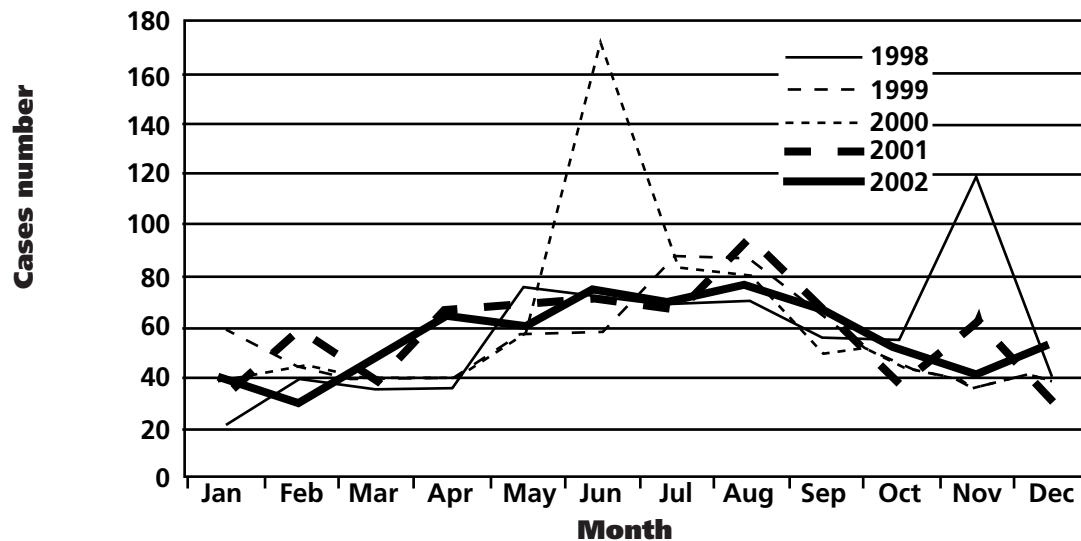


Figure 29 - Salmonellosis - incidence by age group, 2002



Salmonella infections occur year round with a slight increase April through September.

Figure 30. Salmonellosis - reported cases by month of onset, 1998-2002



Submission of *Salmonella* isolates to the PHL for serotyping is required. Serotyping and molecular epidemiologic methods may aid in identifying outbreaks and sources of infection. *S. typhimurium*, *S. enteritidis*, *S. newport*, *S. heidelberg*, and *S. saintpaul* continue to be the five most common serotypes found in Washington, accounting for 55% of all cases of salmonellosis in 2002. Isolates from 38 cases (6%) were unavailable for serotyping.

Serotype	#	%
Typhimurium	123	19
Enteritidis	105	16
Newport	50	8
Heidelberg	44	7
Unknown	38	6
Saintpaul	31	5
Berta	30	5
Agona	27	4
Hadar	17	3
Montevideo	16	2
Oranienburg	16	2
Poona	15	2
Infatis	15	2
Brandenburg	14	2
Braenderup	13	2
Thompson	10	2
Muenchen	6	1
Stanley	6	1
4.5.12.1:--	6	1
Panama	5	1
Four cases each:	Bovismorbificans: Paratyphi B	
Three cases each:	Derby; Java; Mbandaka; Reading; Urbana; Westhamptom	
Two cases each:	Dublin; Earling; Eastborne; Hvittingfoss; Javiana; Muenster; Schwarzengrun; Virchow; Weltevreden; Worthington	
One case each:	1,4,12:l:--; 18:Z4,Z23; 41:Z4 Z23:--; 48:l:Z; 50:K:Z; 50:K:3,N,X,Z15; Adelaide; Anatum; Apapa; B;4,12:l:--; Clarkamas; Cubana; Daytona; Hartford; Itami; Kiambu; Litchfield; London; Oslo; Paratyphi A; Rubislaw; Sandiego; Senftenberg	

Common exposures for salmonellosis include ingestion of contaminated eggs, raw milk, poultry, meat, produce, and contact with reptiles or other exotic pets. Reported cases in 2002 included 18 food handlers.

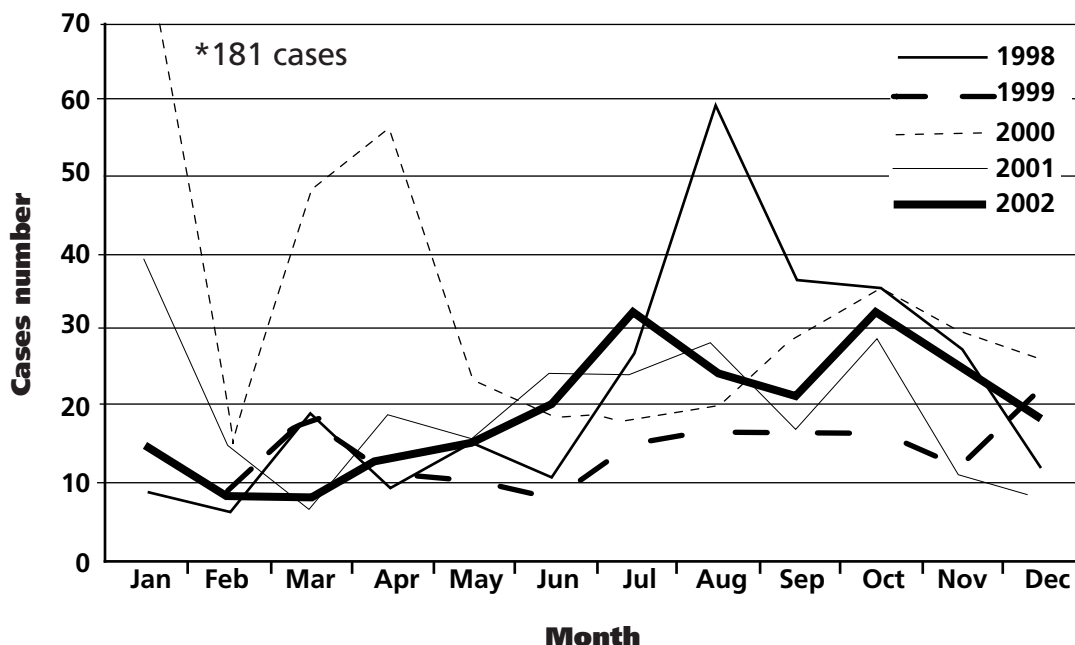
In 2002, several outbreaks of salmonellosis were reported in Washington, including an outbreak of *S. poona* associated with cantaloupe consumption (MMWR 2002; 51(46): 1044-1047), *S. saintpaul* associated with sprout consumption, and *S. agona* associated with goat meat consumption.

SHIGELLOSIS

Shigellosis is an acute bacterial infection caused by *Shigella sonnei*, *S. flexneri*, *S. dysenteriae*, or *S. boydii*. Humans are the only reservoir of *Shigella* and transmission occurs by the fecal-oral route, through ingestion of contaminated food or water, or by person-to-person contact. Infection requires ingestion of very few organisms, and outbreaks occur in association with child care or food service facilities. Symptoms include fever, diarrhea, which may be bloody, abdominal pain, malaise, and headache. Shigellosis may also cause watery diarrhea with vomiting. Shigellosis is immediately notifiable in Washington.

In 2002, there were 230 cases of shigellosis reported in Washington for an incidence of 3.8 cases/100,000 population, essentially unchanged from 2001 (3.9/100,000). Cases occurred most commonly in the summer and fall.

Figure 31 - Shigellosis - reported cases by month of onset, 1998-2002



The age range of cases was several months to 78 years, with 41% occurring among children less than 10 years of age. Age-specific rates of shigellosis were greatest for children 0-4 (13.0/100,000) and 5-9 years of age (10.4/100,000). Fifteen percent of the cases attended child care facilities and 13% had a household contact in child care.

Figure 32 - Shigellosis - Incidence by county, -2002

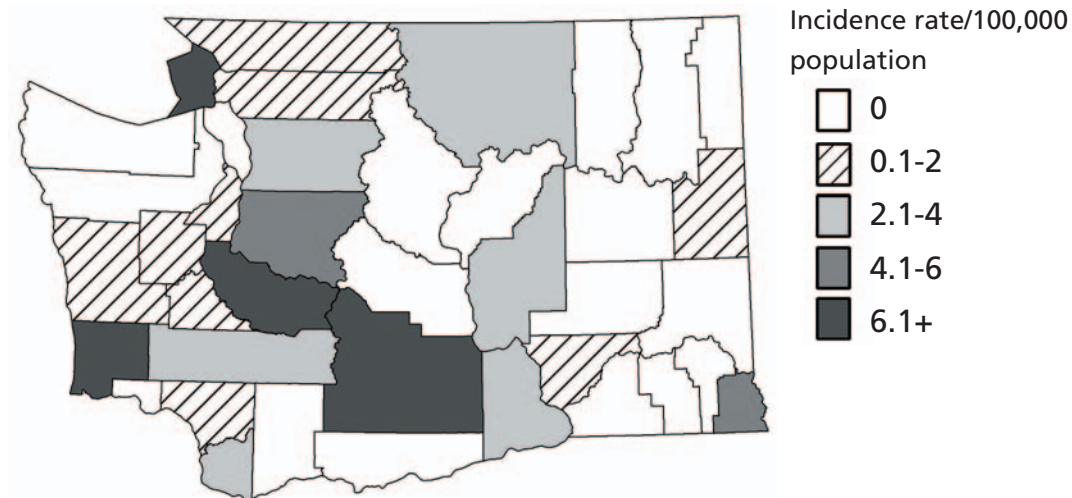
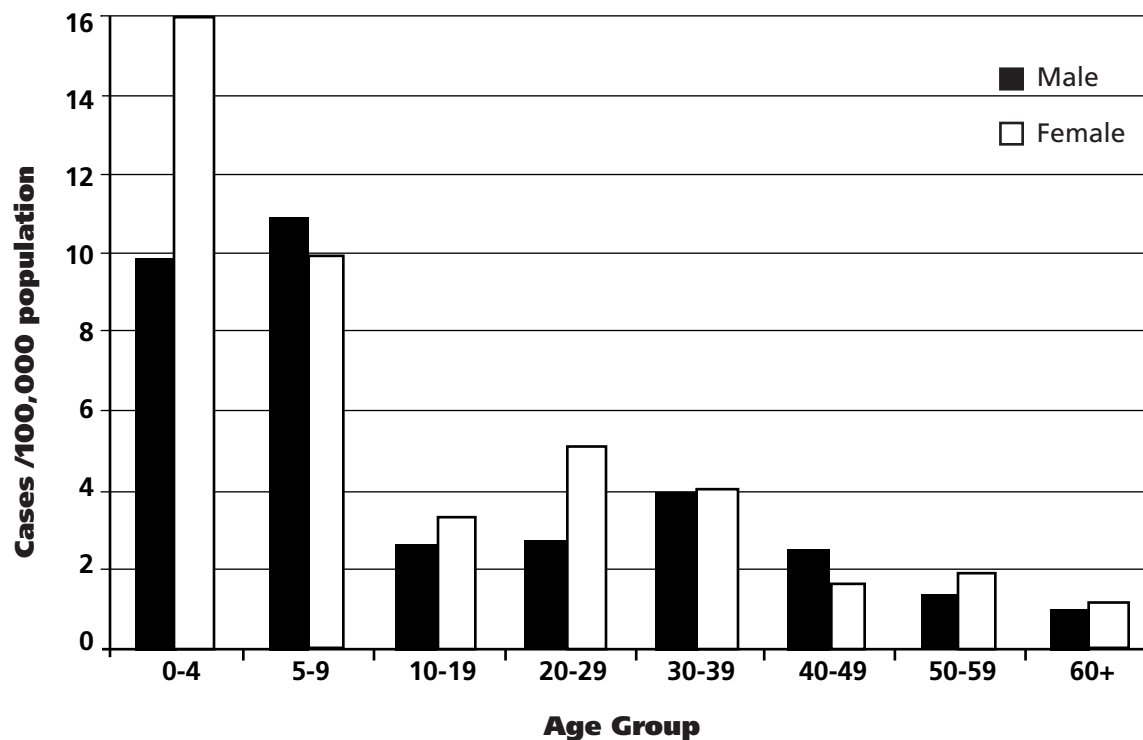


Figure 32 - Shigellosis - Incidence by sex and age group -2002



S. sonnei was the most common species identified, infecting 70% of cases, followed by *S. flexneri* (28%) and one case each of *S. boydii* and *S. dysenteriae*. There were four isolates that were not speciated.

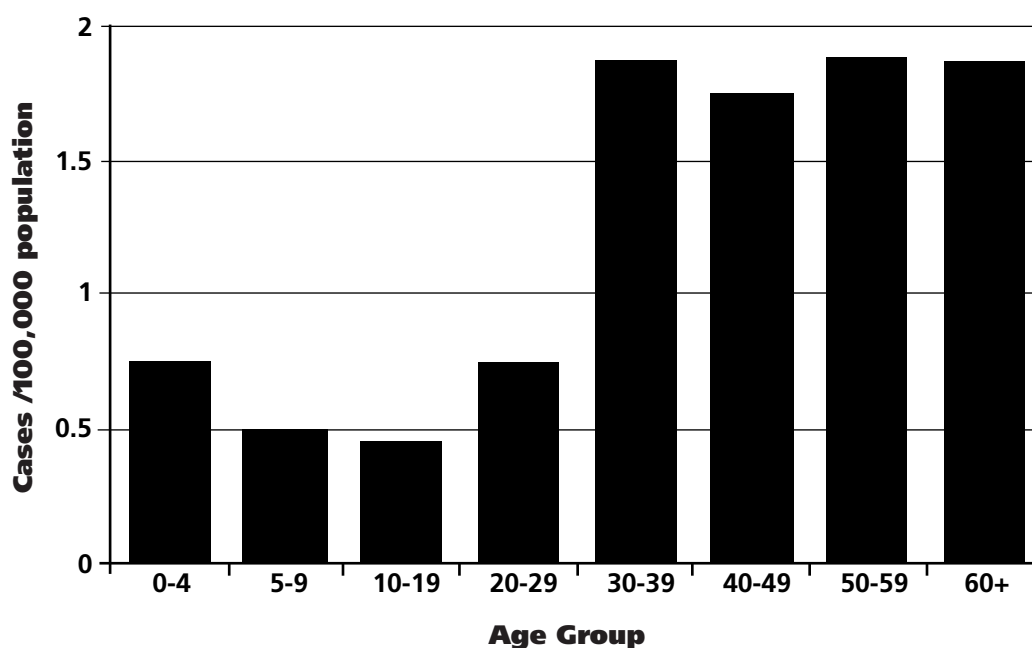
STREPTOCOCCUS GROUP A, INVASIVE DISEASE

Invasive disease cause by group A *Streptococcus* (*Streptococcus pyogenes* or GAS) may include pneumonia, meningitis, septic arthritis, peritonitis, osteomyelitis, post-partum and nosocomial infections, bacteremia, streptococcal toxic shock syndrome (STSS), and deep soft tissue infections (e.g., necrotizing fasciitis). Noninvasive skin and throat infections are less serious and are not reportable to public health agencies. Isolation of GAS by culture from a normally sterile site is required for case confirmation. The overall case-fatality rate for invasive GAS disease is 10-15%.

Invasive GAS infections became notifiable in Washington in 2001. In 2002, there were 80 cases of invasive GAS disease for an incidence of 1.3 cases/100,000 population, compared to an incidence of 1.5/100,000 in 2001. Nine deaths were reported for a case-fatality rate of 11.5% (outcome data was not available for 2 [3%] cases).

There was no significant difference in disease incidence by gender. The median age of cases was 45.5 years (range: 11 months to 88 years of age); the incidence was approximately three times greater in individuals 30 years of age or older compared with those under 30.

Group A Streptococcus, invasive disease - Incidence by age group - 2002



There were a variety of GAS clinical syndromes reported, and many patients were classified as having multiple syndromes.

Table 9. Group A *Streptococcus*, invasive disease - clinical syndromes -2002

Syndrome	# cases
Blood Infections	60
Necrotizing fasciitis	18
Pneumonia	12
STSS	10
Septic arthritis	5
Postpartum blood infection	2
Meningitis	1
Osteomyelitis	1
Pentonitis	1

The risk factor most commonly identified was the presence of pre-existing wounds caused by blunt trauma, penetrating injuries, intravenous drug use, or recent surgical procedures.

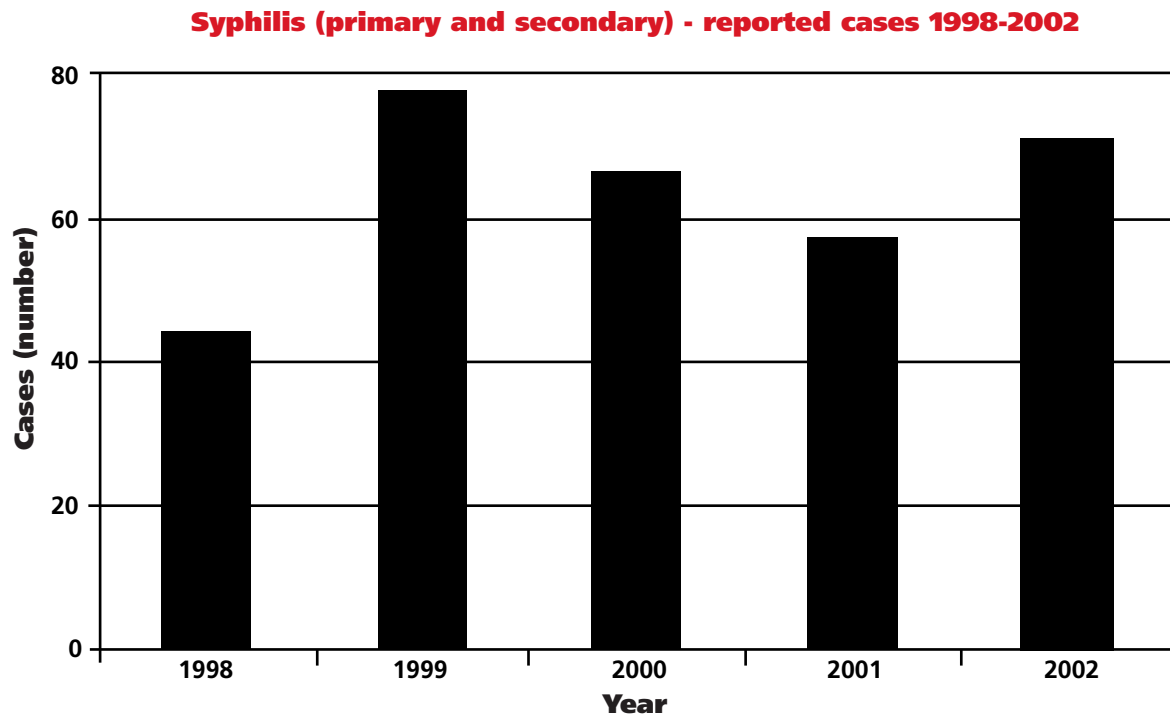
SYPHILIS

Syphilis is a genital ulcer and systemic disease caused by the spirochete *Treponema pallidum*. *T. pallidum* is transmitted by direct contact with lesions of primary or secondary syphilis, or by perinatal transmission. Syphilis is divided into four stages - primary, secondary, early latent, and late/late latent. Untreated, syphilis is infectious during the first three stages. Untreated late latent or late syphilis may cause damage to the central nervous system, heart, or other organs. Similar to other genital ulcer diseases, syphilis facilitates the transmission of HIV.

Signs and symptoms differ for each stage of syphilis. Primary syphilis may be characterized by a painless ulcer, or chancre, at the site of infection (mouth, genitals, anus). Secondary syphilis, which occurs 3-6 weeks after primary infection, may present with a fever, diffuse rash that involves the palms or soles, myalgias, headache, hair loss, and fatigue. Primary and secondary syphilis resolve with or without treatment, but some untreated infections may progress after many years to late syphilis with irreversible multi-organ damage. Congenital syphilis may follow early, or rarely, late infection during pregnancy, and fetal death occurs in approximately 40% of cases if untreated. Surviving infants born with congenital syphilis may have multi-organ damage and serious bone deformities.

Current recommendations for diagnosis and treatment of syphilis can be found in the CDC's *2002 STD Treatment Guidelines*, available on the CDC website at: www.cdc.gov/STD/treatment/.

The last major syphilis outbreak in Washington occurred in 1989-1990. In 2002, there were 70 primary and secondary (P & S) infections (incidence: 1.2 cases/100,000 population), 23 early latent cases (0.3/100,000), 63 late/late latent cases, and 2 cases of congenital syphilis. Rates by county, age, and race were not calculated due to small numbers of cases.



Seventy-one percent of the cases of P & S syphilis in 2002 were reported by King county, and many of the other cases in the state may be associated with this ongoing outbreak (occurring almost exclusively among MSM). One-half of the male cases were HIV infected and most were receiving care for HIV at the time of their syphilis infection. Because of this, routine STD screening in primary care settings is recommended.

TETANUS

Tetanus results from exposure to a neurotoxin produced by *Clostridium tetani* bacteria, usually as the result of introduction of the bacteria into a wound by a penetrating injury. *C. tetani* are commonly present in the soil and the intestines of animals and humans.

The toxin prevents release of neurotransmitters, causing muscle spasms and contractions that progress in a descending pattern, ultimately causing respiratory arrest and autonomic dysfunction. Mortality is high, even with intensive care. Tetanus is prevented by routine childhood and adult vaccination, and appropriate wound care following tetanus-prone injuries.

Now relatively uncommon in the US, tetanus primarily affects unvaccinated or under-vaccinated persons, usually older adults who have not received recent booster doses of tetanus toxoid. The most recently reported case of tetanus occurred in 2000, and the last death from tetanus occurred in 1983. No cases of tetanus were reported in Washington in 2002.

TRICHINOSIS

Infection with the parasite *Trichinella spiralis* can result from eating raw or insufficiently cooked flesh of animals containing viable encysted larvae. Symptoms range from inapparent infection to a fulminating, fatal disease depending on the number of larvae ingested. Sudden appearance of myalgias with edema of the upper eyelids and fever are early characteristic signs. Wild game from out-of-state is a commonly reported exposure in Washington. The last case of trichinosis in Washington occurred in 2000, and there were no cases reported in 2002.

TUBERCULOSIS

Tuberculosis (TB) is a systemic infection most commonly caused in the US by the acid-fast bacillus *Mycobacterium tuberculosis*.

M. tuberculosis is transmitted by the airborne droplets from respiratory secretions of infectious persons. Infection results in TB disease or latent TB, and those with latent TB are not infectious. The incubation period is highly variable, and most cases of TB disease are pulmonary, with respiratory and systemic symptoms, including hemoptysis, pleuritic chest pain, weight loss, fatigue, malaise, fever, and night sweats. Symptoms of extrapulmonary TB disease depend on the site of infection. TB infection can be detected by reaction to the purified protein derivative, or tuberculin, skin test; diagnosis of TB disease is usually performed by examination of chest radiographs and sputum or tissue stained for acid-fast bacilli, and isolation of *M. tuberculosis* by culture of sputum or other specimens. Tuberculosis disease is immediately notifiable in Washington.

After a decade-long decrease in the number of TB cases reported annually in the US and Washington TB has re-emerged as a serious communicable disease. The number of TB cases in Washington increased 21% from 1987-1991 (255 vs. 309 cases, respectively). Factors contributing to the increase in TB include an increase in immigration from endemic countries, the association of TB with the HIV epidemic, and transmission of TB in congregate settings (e.g., correctional and health care facilities, homeless shelters). From 1991-1994 the number of TB cases decreased 17%. After a period of increased cases (1995-1997) the case count declined 21%.

In 2002, 252 new cases of active TB in Washington were reported to DOH. The statewide TB incidence was 4.17 cases/100,000 population, the lowest incidence ever recorded for Washington.

Twenty-two of thirty-nine counties reported at least one new case of TB. King and Whatcom counties had the highest incidence (8.9/100,000 and 4.0/100,000, respectively).

Age-specific rates of TB were highest among persons 65 years of age and older (7.8/100,000). Persons 5-14 years of age continue to have the lowest incidence, 0.6/100,000.

Table 10. Tuberculosis by age group -2002

Age Group	Rate	# Cases	%
0-4	1.7	7	3
5-14	0.6	6	2
15-24	4.4	38	15
25-44	4.9	89	35
45-64	4.0	59	23
	7.8	53	21
TOTAL	-	252	100

A large proportion of TB cases were reported among certain racial/ethnic groups. The incidence among Asians was more than 26 times higher than among whites and 4 times higher than that of Hispanics. The incidence among African Americans was 24 times higher than that of whites and 4 times higher than that of Hispanics. The incidence among whites remains below the national level (1.0 vs. 5.2, respectively).

Table 11. Tuberculosis by race/ ethnicity -2002

Race/Ethnicity	Rate	# Cases	%
White, Non-Hispanic	10	49	19
Black, Non-Hispanic	24.4	47	19
Hispanic, All races	6.4	33	13
American Indian/Alaskan Native	16.8	15	6
Asian/ Pacific Islander	26.5	103	41
TOTAL	-	247	98

Note: 5 cases with unknown race/ethnicity

Sixty-nine percent (173 cases) of cases of TB occurred among persons born outside the US. Foreign-born persons accounted for 66% (96/145) of male TB cases and 72% (77/107) of female TB cases.

Table 11. Tuberculosis by race/ ethnicity and country of origin -2002

Race/Ethnicity	US		FOREIGN		TOTAL
	# cases	%	# cases	%	
White, Non-Hispanic	33	67	16	33	49
Black, Non-Hispanic	18	38	29	62	47
Hispanic, All races	6	18	27	82	33
American Indian/Alaskan Native	14	93	1	7	15
Asian/ Pacific Islander	5	5	98	95	103
	76	31	171	69	247

Note: 5 cases with unknown race/ethnicity

The number of persons with TB also infected with HIV increased from 10 in 2001 to 13 in 2002.

Resistance to at least one anti-TB drug was found in 40 of 214 (19%) persons from whom *M. tuberculosis* was isolated and tested for drug susceptibility. Of these forty, four (10%) were from the US and 36 (90%) were foreign-born. There was one multiple-drug resistant (defined as resistance to at least INH and rifampin) isolate of *M. tuberculosis* identified in 2002.

A description of a tuberculosis outbreak in homeless persons in King county can be found in Appendix IV: Special Topics.

TULAREMIA

Tularemia, also known as rabbit or deerfly fever, is an acute bacterial infection caused by *Francisella tularensis*, which is carried by multiple insects and animals. Infection may develop after ingestion of contaminated food or water, by inoculation (deer fly or tick bite, or while handling or skinning rabbit), or by inhalation of bacteria aerosolized during handling of contaminated animal carcasses. The syndromes of tularemia include fever, malaise and lymphadenopathy (glandular) often accompanied by skin ulcers (ulceroglandular) or eye infection (oculoglandular); and pharyngitis, abdominal pain, and diarrhea (oropharyngeal). Inhalation of the bacteria can cause pneumonia (pneumonic), and any of the forms can result in sepsis (typhoidal). *F. tularensis* is a potential agent of bioterrorism, and is immediately notifiable.

In most years, fewer than 10 cases of tularemia are reported in Washington. During 2002, 3 cases were reported among Washington residents, one exposed to insect bites out-of-state, one lived in a rural area, and one did not provide exposure information.

TYPHUS

Typhus is a rickettsial disease transmitted by lice (*Rickettsia prowazekii*), fleas (*R. typhi*, *R. mooseri*, *R. felis*), or mites (*Orientia tsutsugamushi*). Typhus is characterized by the acute onset of headache, chills, prostration, fever and generalized pains. A diffuse macular rash may occur that spares the face, palms and soles. In the US, only flea-borne, or murine, typhus is likely to occur with fewer than 80 cases reported annually. Murine typhus may resolve spontaneously, and the case-fatality rate is 1%.

A seasonal peak occurs in late summer and autumn; cases tend to be scattered geographically, with a high proportion reported from Texas and southern California. Rats, mice, and possibly other small mammals are the reservoir for fleaborne typhus. Typhus is immediately notifiable.

The last reported case of murine typhus in Washington occurred in 1994, and was associated with travel. No cases were reported in 2002.

UNEXPLAINED CRITICAL ILLNESS OR DEATH

Illness or death occurring in a previously healthy individual 1-49 years of age with hallmarks of an infectious disease (e.g., fever, abnormal white blood cell count), no immediate explanation, and severity resulting in intensive care unit admission or death, is immediately notifiable as unexplained critical illness or death (UCID). Surveillance for UCID in Washington began in 2001 to identify emerging pathogens and unusual disease occurrences.

Six cases of UCID were reported to DOH by five counties in 2002. The average age was 14 years (range: 2-49 years); 5 of the 6 were fatal. The critical illness syndromes reported were: cardiac disease (2), meningoencephalitis (2), shock (1) and death (5). No trends of note were identified.

UCID surveillance also identified several unusual complications of notifiable infectious diseases, including yellow fever vaccine-associated viscerotropic disease (YEL-AVD) and dengue fever (see Rare Diseases of Public Health Significance), both initially reported as UCID in 2002. These cases were reclassified after an etiology was identified and are not included in the 2002 case count.

UCID is still dramatically underreported in Washington, in part due to the complexity of the case definition and a lack of familiarity with reporting requirements. Surveillance for UCID is a valuable tool for identifying unusual disease events, such as the cases of dengue hemorrhagic fever and YEL-AVD. A sudden increase in UCID reports should also raise the index of suspicion of a possible bioterrorism event.

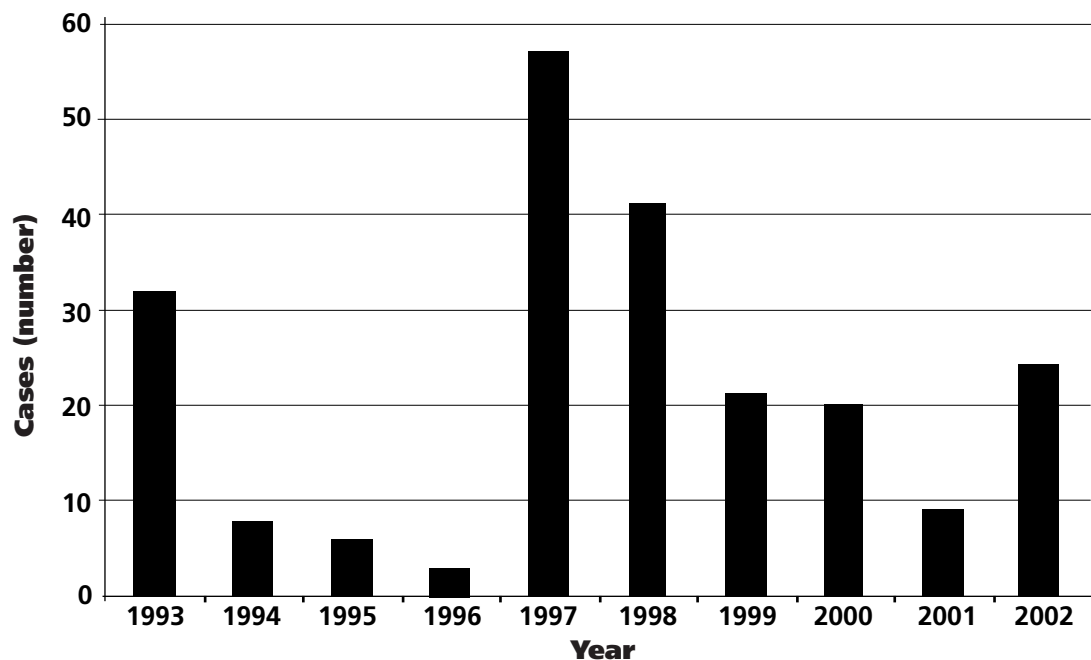
VIBRIOSIS

Vibriosis caused by infection with *Vibrio* bacteria, including non-toxigenic *V. cholerae*, *V. parahaemolyticus*, *V. vulnificus* and other less common species. Infections caused by toxigenic *V. cholerae* are notifiable as cholera.

V. parahaemolyticus occurs naturally in Pacific coastal waters, especially in warmer months. Transmission of *Vibrio* usually occurs by ingestion of contaminated raw or undercooked seafood, or through abrasion or penetrating injuries acquired in contaminated seawater. Vibriosis causes abdominal pain, watery diarrhea, vomiting, headache, and fever. *V. vulnificus*, a species that occurs in the Gulf of Mexico, can cause sepsis and shock in persons with immune deficiencies, cancer, or chronic liver, kidney, or intestinal disease. Other *Vibrio* species cause skin or wound infections after exposure to seawater.

The number of cases of vibriosis vary from year to year; the 25 cases reported in 2002 included 16 *V. parahaemolyticus*, 5 non-toxigenic *V. cholerae* associated with travel to Singapore, the Caribbean, or Mexico; one *V. fluvialis*, and 2 tissue infections due to *V. alginolyticus*, one the result of out-of-state exposure. Of 14 *V. parahaemolyticus* cases with available data, 3 reported consuming shellfish in other Pacific coast states or provinces, and 11 reported consumption of shellfish in Washington. Of the 11 cases with Washington exposure, 6 consumed shellfish in restaurants, 3 were associated with privately harvested shellfish, and 2 with retail shellfish.

Figure 36. Vibriosis - reported cases, 1993-2002



YELLOW FEVER

Yellow fever is caused by the yellow fever virus, which is a flavivirus. Yellow fever is a mosquito-borne infection, and the vector mosquitoes (*Aedes*) occur only in Africa and South America, where both animals and humans serve as a reservoir. Symptoms include the acute onset of fever, rigors, headache, backache, generalized myalgias, prostration, nausea, and vomiting. Hepatic and renal insufficiency may occur, with jaundice and proteinuria. Most infections resolve, but some progress to a hemorrhagic diathesis with hepatic and renal failure, which has a mortality rate of 5-40%. Yellow fever is immediately notifiable in Washington.

Vaccination recommendations for travelers are available from travel clinics and the CDC website (www.cdc.gov).

With the exception of a single case of yellow fever vaccine-associated viscerotropic disease (YEL-AVD) reported in 2002, no cases of yellow fever have ever been reported in Washington.

YERSINIOSIS

Yersiniosis is an acute enteric infection caused by the bacterium species *Yersinia*, primarily *Y. enterocolitica*; however other *Yersinia* species, comprising multiple serotypes and biotypes, are pathogenic. This disease is characterized by acute febrile diarrhea and abdominal pain that may mimic appendicitis; complications are rare. Wild and domestic animals are reservoirs for *Yersinia*; pathogenic *Y. enterocolitica* has been isolated from a variety of foods, including raw pork or pork products. Transmission occurs by fecal-oral route, through ingestion of contaminated food or water or by direct contact with infected humans or animals.

There were 26 cases of yersiniosis reported in Washington in 2002, which is similar to the number of cases reported in previous years. Most cases reported one of the following risk factors: pork consumption, ingestion of, or recreation in untreated water, or contact with animals (e.g., cats, dogs, pigs, goats and horses).